THE VETERINARY RECORD

A Weekly Journal for the Profession.

No. 317. SATURDAY, AUGUST 4, 1894. Vol. VII.

Disappearance of the Anthrax Bacillus after Death.

The Royal Agricultural Society of England has issued a leaflet from which we take the following. It is collated from the article on anthrax, by Professors Brown and McFadyean, which appeared in the last number of the Journal of the R.A.S.

It will be noted that as soon as respiration ceases "the *growth* of the bacilli is promptly arrested"—growth, not existence, is the word used. A short time after death the bacilli not merely cease to grow—"they degenerate and die." Of course in blood which has escaped from the body we must not expect this degeneration and death, nor is it advisable, we presume, to treat the internal organs twenty-four hours after death as harmless and inert.

"That anthrax bacilli, in certain circumstances, rapidly disappear from the blood and organs of animals dead of the disease is a fact not so well known as it ought to be.

When a cow or sheep dead of anthrax is opened immediately after death, the bacilli which are the cause of the disease are found unmixed with other germs in the blood all over the body, and in special abundance in the spleen. It is mainly during the last few hours of life that the complete invasion of the blood takes place, and it might be supposed that the germs in the blood would continue to multiply even after death. Such, however, is not the case. As soon as the breath has left the animal, growth and multiplication of the bacilli cease, because the germs of anthrax belong to the class of so-called aërobes, for the growth of which oxygen is strictly necessary. During the life of the animal that harbours them, the bacilli obtain the necessary oxygen from the same source as the animal cells, viz.: from the blood, which becomes charged with oxygen in passing through the lungs. But as soon as respiration ceases the supply of oxygen is cut off, and the growth of the bacilli is promptly arrested.

But in the blood of an animal dead of anthrax the bacilli do not merely cease to grow or multiply—they degenerate and die. The alimentary canal of the sheep, ox, and horse, always contains large numbers of putrefactive bacteria, which, during life, are unable to penetrate into the blood or tissues; but immediately after death these bacteria rapidly make their way into the wall of the bowel, and gain access to the blood-vessels, along which they soon spread over the whole body.

When an anthrax carcass is left unopened, the invasion by putrefactive bacteria is sometimes so complete within twenty-four hours that not a single anthrax bacillus can be detected by microscopic examination in any of the organs in the chest or abdomen; but in the blood of the ears or the feet the anthrax bacilli may be recognisable on the third day after death. These statements are based on observations that have been made in the Research Laboratory of the Royal Veterinary College during the last three months, and they indicate that when an animal is unexpectedly found dead, and anthrax is suspected, if the carcass is already partially putrid, blood from an ear or a foot ought to be examined in preference to spleen-pulp, or blood from one of the large veins of the body. At the present time the material sent to the Laboratory for examination in suspected cases of anthrax is almost always the spleen or a part of it, and in a considerable proportion of cases a positive opinion cannot be given because of putrefactive changes; an ear, or in the case of a sheep, a foot should be sent instead."

Insurance Veterinary Fees.

Half-a-crown for examining a horse and one shilling for a cow seem to be ordinary fees paid by insurance companies to veterinary surgeons. Clearly such fees are quite inadequate if the examination required is one worth paying for. If the examination is only such a casual affair that it may fail to detect some disease certain to be fatal, and possibly transmissible to other animals, it had far better be not undertaken by a professional man. The prevalence of glanders amongst some studs of horses would render any insurance of them merely a step towards bankruptcy, and it may be possible for a company to lose heavily by insuring some herds of cattle. The question to be first answered is: What do insurance companies expect for a shilling examination, or for one at half-a-crown when the practitioner has to ride five miles to make it? If the company be satisfied by a simple recognition of colour and existence they might obtain that from the owner. If they really require an examination which shall detect all diseases they must pay a proper fee or the profession must decline to act. Of course it will be said that the premium paid is insufficient to include a professional fee, and no doubt this is true. If there are a number of animals to examine at one time, special terms can be arranged by individuals, but in fairness to ourselves we should object to work for journeyman's wages. Possibly the insurance companies, where one animal is concerned, or where the distance is great for a veterinary surgeon to go—possibly, they might insure subject to the owner sending a veterinary certificate. An owner would employ his regular attendant and terms would be more easily arranged.

CASES AND ARTICLES

BRAIN OR STOMACH?

The following four cases have occurred in my practice during the last month; they are so peculiar that I think a few notes may be interesting to members, and someone may enlighten me as to the probable cause of the attacks.

Case 1. A brown cart gelding, aged 11, I found standing with his four legs in the manger of a shed, and his nose elevated and pushed through the wooden partition, he was sweating profusely, and constantly fighting the wall with his fore feet. I had great difficulty in moving him, but at last succeeded in pulling him on his back, from which position he got up himself and stood with his nose almost touching the ground. Temperature 101 F. pulse 50 and strong. He was bled and physic administered; the next day he had great difficulty in masticating, the jaws being almost fixed; he was blistered behind the ears, and recovered in about a fortnight. His food was soaked maize, wheat chaff and green clover. He had an exactly similar attack 16 months ago, and a slighter one in October last; since the first attack he has always carried his head low.

Case 2. A grey mare, 9 years old, taken ill whilst at work. I found her with her head held low and pushed in the corner; when moved she fell down, she was got up and walked, or rather fell, into the yard. She could scarcely see, pulse 45, and hardly perceptible at the jaw, temperature 101·4 F.; physic was given, which did not act, and a blister applied behind the ears; occasionally she would try to eat but the jaws seemed almost powerless. As she fell about in all positions and there was a lot of water in the yard, a halter was put on and held by a man, she then walked in a circle, constantly falling; she would lie quite still a few minutes and on rising stumble on her knees and head perhaps ten yards, and then continue walking. She gradually got worse and finally was unable to rise, she was shot on the fourth day. The brain was shattered by the shot; stomach and intestines healthy; kidneys and liver showed slight traces of disease; bladder empty, heart and lungs healthy, she was feeding on green rye and tares, crushed maize, and wheat chaff. She had a slighter attack two years ago.

Case 3. A brown cart mare, 14 years old, was taken ill at work, almost exactly similar to No. 2, with the exception that when I saw her she could not walk five yards; temperature 101 F., pulse 60 and full. Her head was much swollen from constantly dashing it against the boards, partial sweating about the neck and flanks, she fell frequently; she was bled and physic administered. On the third day she was unable to rise so was shot, I did not have the opportunity of making a post-mortem examination. Her food was dry clover, beans and soaked maize.

Case 4. A brown cart gelding, 11 years old, very similar to No. 1. The message I got was, that the horse had gone mad. I found him standing in a loose box with his head pressed in the corner, I moved him and he walked backwards about 5 yards, elevating his head in jerks, then he made a dash forward, got his fore legs in the corner of the manger and commenced pawing the side of the box, the perspiration literally streaming down him. I was a long time before I could get near him, but eventually bled him and gave a dose of physic; the next day he was almost blind, and for three or four days he was very dull and carried his head down. He could suck a little nourishment from a pail, but a mouthful of green food, it would take him three or four minutes to masticate. Since then he has made gradual improvement, but still (thirteen days from the attack) carries his head lower than common. His food was green tares, wurtzel, soaked maize and wheat chaff.

ERNEST MORGAN, M.R.C.V.S.
South House, Faversham.

"DROPPED SHOULDER."

Under this term is recognised a condition of the horse's fore-leg which supervenes upon a fall, a slip or other injury. I have seen it follow a fall into a sand-pit, and I have met with it in horses said not to have fallen, slipped, or been injured. The most common cause in my experience has been a slip upon wood pavement. The symptoms are great lameness—almost inability to move the limb. Whilst at rest the foot is placed forward, the knee flexed, the elbow suspended six or eight inches below its proper level, and the humerus assumes a direction nearly perpendicular. These symptoms suggest at once that the fault lies with the muscles which flex the humerus upon the scapula, or which maintain it in normal position. There is no displacement of any bone at the joints. Each joint may be moved easily enough, and if the foot be drawn back to its place, at the same time that the knee is forcibly straightened, the elbow rises to its proper position. It would be more graphically described as "dropped elbow" but there is no disease or injury of the elbow—the mal-position of the limb from the humerus downwards being due apparently to the muscular inability to maintain the necessary relative position of that bone to the scapula. Post-mortem examination sometimes discloses a fractured first rib, sometimes only a wasted and pallid condition of the *triceps extensor brachii*. How the fracture of a first-rib causes this condition I confess I do not know. Possibly some injury to the nerves supplying the muscles is the explanation. The wasting of the *triceps* muscles may be looked upon as either cause or effect, and I favour the view that it is the latter, being due to their over extension as the result of the limb hanging on them and stretching them.

Some of these cases remain for months before recovery takes place, some never recover, but the most curious and inexplicable are those that recover suddenly. Two such cases I have noticed and they lead me to write this confession of ignorance. I

want to know how they are to be explained. The two cases are very similar.

The first was an omnibus horse that fell lame on his journey and had to be brought home in a float. He was put in slings and the shoulder treated with warm fomentation. No improvement was made, and in four weeks time he was taken out of the slings. A mild blister was applied to the triceps muscle with no marked effect upon the lameness. He was kept in a loose box, and when standing always maintained the same posture—foot forward, knee bent and elbow hanging six or eight inches below its proper level. No more weight was sustained by the limb than if the humerus had been fractured. On calling one day and looking over the box door I was astonished to see the horse standing level on both fore feet, and capable of moving without great effort. On drawing the horse-keeper's attention he told me that the animal had lain down and after a struggle had risen with power to stand on the limb.

The second case was shown me by Mr. Wooff, of Greenwich. It had remained powerless for weeks and then was found one morning able to stand on the limb.

This suddenness of recovery is inexplicable. It seems as if some displacement had suddenly been reduced by an effort or struggle of the animal. The cure is not complete. The horse which has for weeks been unable to put weight on the limb recovers the power to stand, but movement is accompanied by lameness for some further time. The weight thrown on the leg by progression is not completely supported. At each step the shoulder gives, and it is evident that the triceps muscle yields, and is not quite able to keep the radius in firm relative position to the humerus.

Something alters suddenly. The leg which had been bent and incapable of supporting the least weight, suddenly resumes the power of sustaining some weight, and is capable of maintaining a normal straightness—the knee is kept extended, and the elbow retains its proper level.

What was the lesion and how was the recovery effected? I confess I cannot explain, and should be glad of any assistance other practitioners may be able to contribute. These cases recover, and no post-mortem is obtained to clear up the enigma. Is the condition entirely muscular, and if so why the sudden alteration?

W. H.

GRAIN POISONING—A CORRECTION.

In the last issue of *The Record*, in outbreak No. 2 I stated that I suspected ground Indian corn was the cause of the mischief, but I find I am mistaken in my surmise. The owner told me the other day he bought half a ton of foreign pea meal in the end of January, which lasted two or three months, and this had entirely escaped his memory when I made my first enquiries, although I distinctly asked him if he had been using any peas. At the same time he told me he had got rid of an oldish horse a month or so previous to my seeing the others, because he could do no work without falling down in these suffocating fits. but as he was an old horse and worn out he never thought of telling me until he remembered the pea meal. I think this clears up the cause entirely. I could not understand the symptoms coming on so quickly after feeding on the ground Indian corn, if it was to be credited with the production of disease.

R. Cockburn, M.R.C.V.S.

VETERINARY SOCIETIES.

MIDLAND COUNTIES VETERINARY MEDICAL ASSOCIATION.

The quarterly meeting of the Association was held at the Swan Hotel, Stafford, on Friday, May 11th, 1894. Mr. H. Olver, of Tamworth, president, was in the chair. There were present Professor Penberthy, Messrs. J. Blakeway, Birmingham; Jones, Leicester; H. J. Dawes, hon. sec., West Bromwich; R. Cartwright, Wolverhampton; R. C. Trigger, Newcastle; W. S. Carless, Worcester; W. Carless, F. Carless, Stafford; J. Coe, Stoke; Pemberton, Bridgnorth; J. Burchnall, Loughborough; G. Smith, Tunstall; J. Wartnaby, Burton; A. Over, Rugby; Hodgkins, Hanley. Visitors: A. W. Mason, Leeds; H. Bidlake, Stafford.

Mr. H. J. Dawes (hon. sec.) read the minutes of the previous meeting, which were confirmed.

Messrs. H. Bidlake, Stafford; and W. H. Brookes, Handsworth; were then nominated for election as members of the Association.

The Hon. Sec. read the circular letter received from the Central Veterinary Medical Association referring to the Veterinary Defence Association.

On the proposition of Mr. Blakeway, seconded by Mr. W. S. Carless, it was resolved that it was not in the interests of this or any other Society to criticise the conduct of another Society.

Letters of apology were read from the following:—Profs. McFadyean, Walley, Williams, McCall, Pritchard, Macqueen, Sir. H. Simpson, Dr. Fleming, Messrs. Malcolm, Goodhall, Wilson, Green, Price, Wragg, Perrins and others.

PRESIDENTIAL ADDRESS.

Harry Olver, F.R.C.V.S.

Gentlemen,—In assuming the presidential chair of this Association allow me first to thank you for the compliment which you have paid me in electing me for a second time to this position. I assure you I appreciate the honour which you have conferred, and nothing shall be wanting on my part, as far as I am able, to make the coming year as successful as any of its predecessors in providing alike interesting papers, and securing the comfort of the members—on whose support I confidentially rely—indeed. I thus early claim your indulgence—time has not permitted of my writing an inaugural address, as has been the usual custom, and I can offer a few remarks only on what I think may be of interest to you. But before doing so, I must allude to the sad event which has taken place since we last met. Unhappily my predecessor, Mr. Merrick, who presided over you on that occasion with his usual ability has left us for ever; we cannot forget the happy face and ever genial smile of the man who was always willing to spend himself to add to the comfort of others. Nor should we forget that Mr. Merrick was something more than our president, he was also a member of the Council of the

Royal College of Veterinary Surgeons by nomination from this Association, and in each capacity he was an attentive and diligent worker. We very sincerely mourn his loss, and I feel sure it will be your wish before this meeting terminates that we should pass a vote of condolence and sympathy with his sorrowing wife and family in the loss which they have sustained.

My mind to-day, perhaps naturally, reverts some twenty or more years, and compares the position of the Midland Counties Veterinary Medical Association of that day with the present. Then the Society was in a moribund condition; three meetings were called to discuss the advisability or otherwise of putting an end to its lingering existence. At the first two meetings the necessary quorum of five was not present; on the third occasion we were more successful, and after considerable discussion it was determined to make one more attempt to resuscitate it. Its officers worked steadily and persistently, with the result that the almost defunct Society of twenty years ago now claims to be one of—if not the strongest provincial Association in the country. And I am proud to see this, for I believe nothing in connection with the veterinary profession tends to do so much good to the profession as a body as well as to the individual members as do the meetings of these Associations. I take it its objects are mainly threefold, viz., scientific, political and social. In a scientific sense we who have graduated any number of years know that the teaching of pathological and other subjects of to-day is quite different to our student days. To hold our position as scientific men and successful practitioners we must keep pace with the advance of science, and in addition to our reading, these meetings have vastly assisted to this end. For the leaders of thought and scientific research of the profession, in the persons of the professors of the different schools and others, have from time to time come amongst us and delivered addresses or read papers on subjects of interest, and by explanation and discussion have enabled us to grasp facts which could not have been so fully or agreeably obtained in any other way. To-day we are looking forward to an intellectual treat in the address which will be delivered to us by Prof. Penberthy on "Intestinal Parasites."

Politically, we know that in the last few years many and most important changes have been brought about by the governing body of the profession; these matters have received attention at the hands of this Association, and resolutions passed by meetings of members such as these must carry considerable weight, and also strengthen the hands of the Council in their deliberations. But our political strength does not stop here. By the alteration in the method of election every M.R.C.V.S. has now a vote for members of Council without going to London, and these Associations have rendered good service in nominating from amongst its members, gentlemen known to them as being suitable for a seat on the Council Board. By combined efforts our nominees have frequently been returned, and I would remind you that our old and tried councillor, Mr. Trigger, is this time one of those who seeks re-election. We know, and the Council knows, that he is not only one of the most active, but also one of the most independent men on that Board, and I am sure you will agree with me that we must make his re-election, as far as possible, a matter of certainty.

Socially, I believe these meetings do a vast amount of good. Is it not a fact that in the past one of the great drawbacks to professional advancement has been the jealousy that has existed amongst the members? Through the influence of this and similar associations I believe this feeling is being very largely dispelled. We are apt to think ill of a man that we do not know, and of whose doing we probably only hear exaggerated misstatements, but meeting together on such occasions as these, we most frequently learn that the man who we have grown to dislike without knowing him claims, and rightly claims, to be as honest and honourable as ourselves; and distrust, through the influence of the social board, gives place to mutual good feeling, and frequently to lasting friendship. If these associations had no other object I think their existence would be justified from the point of view that it enables us to know each other, and by friendly intercourse to rub off the rough edges of discussion, and to help to make our motto *Vis unita fortior* a truism.

Turn from our own Association to the larger field of the veterinary profession, and again compare our position of twenty years ago and that of to-day, and what do we find? I think we shall admit at once a very marked advance. The period of study at our schools has been increased from two sessions, and our examination to three sessions and three examinations, and this year is added still another session. This admits of the teaching not only more fully the different subjects included in the curriculum, but has enabled that curriculum to be considerably extended, which must be, in the long run, to the advantages of the profession, as a body, as well as to the individual members. Another step in the right direction is the raising of the educational standard. It has been my lot as an examiner to have to read certificates, etc., from students which in any particular would not have been a creditable production from a board-school boy of the present day, and I would ask, is it possible that mental faculties which have been so sadly neglected in their early days can fully grasp the many intricate and deeply worked out scientific truths, such as are required of the student of veterinary medicine and surgery to-day.

The query is sometimes put—is the position of the veterinary practitioner, and do the average emoluments of the profession, justify the expenditure of so much time and money? I would answer, the position of the veterinary practitioner is very much what he chooses to make it. If the fact of his being a veterinary surgeon is not a passport to society it certainly is not a bar; and it is only by refusing to admit into our ranks uneducated and unfit men that we can hope to fully attain to the position which we claim to be entitled to. We are sometimes told that it is not to be expected that these highly educated men will undertake some of the work which the veterinary surgeon is called on to perform. In reply I would remark that I have yet to learn that education unfits or makes a man disinclined to do any duty which he may be called on to perform. The practitioner of human medicine is not above his work, and I should maintain that nothing that we have to do is the practice of our profession is nearly so objectionable as the human surgeon is constantly performing; no stable, cowshed, or other building that we have to enter is half as obnoxious as the wretched hovels called human habitation found in the back streets and alleys of large towns, where the human practitioner in the midst of squalor, poverty, and disease is called on to attend the sick and ailing members of the human family. And I think we should not forget that every Englishman is now educated, and I believe as education advances so will the man having practical knowledge with science be more appreciated; quackery will gradually but surely give place to true knowledge; the public will learn that advice is frequently worth more than drugs; and preventive medicine will be much more sought after than it is to-day.

I think our Council is to be congratulated on a great deal of the work which has been performed in the past few years. Naturally a certain amount of friction has been the result of sweeping changes, and I think the time has now come when rest is required, so that the many alterations may be settled into working order, and amended in detail if necessary.

With a general approval of the work done by our

Council, there is one step which they have taken in conjunction with the Farriers' Company and the Royal Agricultural Society which I take to be very unfortunate. We all wish to see the art of shoeing improved, for we all admit the great amount of mischief that is brought about by the mutilation of horses' feet, but surely it is not the right way to make such improvement to give men certificates of efficiency in the art of shoeing without seeing that they are really efficient in every branch, both in making and putting on the shoe, as well as in preparing the foot; and I hope no veterinary surgeon will in future be found to sign the certificates of proficiency without first satisfying himself that the man is really a good workman. No amount of theory will make a man a practical shoeing smith. Then, why call shoeing smiths *farriers*? Well, an old London Company holds the title of farrier, but not one person in a hundred, either in the metropolis or out of it, would connect that term with a shoeing smith. In country districts, undoubtedly, it is still largely applied to the veterinary surgeon, but never to the shoeing smith. The latter frequently is not over troubled with modesty as to his qualifications to attend to all and every ailment of the horse's foot or other part of the body, and, I am told, is already flourishing the elaborate diploma of the Farriers' Company as an evidence of his capability to act as a farrier in the general acceptation of that term. I have not myself seen one of these certificates, but I think the sooner the term "farrier" is deleted the better. Only shoeing smith should be used.

The one topic of perhaps most interest to the profession just now is the proposed establishment of a Veterinary College in Ireland. As practitioners it is no part of our province to interfere with the starting of a teaching school in any part of the country, and now, as we learn it is proposed to affiliate the College in Dublin to the R.C.V.S. of Great Britain, we might perhaps be satisfied. But £15,000 has been promised by the Government towards this institution; the major part of the money comes out of the pocket of the British taxpayers, and I think we have a right to complain if the money is given to establish a fresh teaching school, unless the present schools have also granted to them some state aid, and this every Government hitherto has declined to do. To persons not "in the know" as to the working of political parties this grant seems an anomaly, especially as the names of Irish veterinary surgeons as supporters of the scheme are conspicuous by their absence. I think our Council should watch very carefully this proposal; and it should not be forgotten that very great changes take place in the opinions of Governments as well as other bodies of men. A few years ago Home Rule for Ireland was declared to be outside the range of practical politics by the very people who are now propounding it as a panacea for the ills of that distressed country, and the then representatives of a section of the people in Parliament—who are still M.P's.—declared that nothing short of separation would satisfy them. Are we quite sure, if the Emerald Isle obtains its own Parliament that they will be satisfied for Britishers to examine their veterinary students? As I before said I think our Council should very carefully watch and consider this question.

Gentlemen, I will not further occupy your time only to apologise for not having something better to offer you than these few disjointed remarks. I again thank you for the honour you have done me in electing me your president, and now have the pleasure of introducing my friend Prof. Penberthy, who will both interest and instruct you much better than I could hope to do.

REMARKS ON SOME OF THE COMMON PARASITES OF THE STOMACH AND INTESTINES OF DOMESTICATED ANIMALS.

By JOHN PENBERTHY, Professor, Royal Vet. Coll.

Professor Penberthy expressed his pleasure at hearing the President's address, and said that his appearance at the meeting in the position he occupied was in response to an invitation from the President ostensibly to give them an address on the above subject, but in reality he was more influenced by a desire to repeat an ever agreeable acquaintance with his Fellows of the Midland than by the idea that he had anything very new to bring under consideration. One result, at least, of being invited pretty frequently to address meetings of Medical Societies was to be drawn to the conclusion expressed by Solomon, "There is nothing new under the sun." Fashion, however, as well as scientific experiment and careful observation of common facts supply some basis for variety. Until comparatively recent times the causes of disease generally were deemed too subtle for demonstration. Their corporeal existence was not recognised, they were termed *materies morbi*, humours, and what not; at any rate, they had to be shrouded in mystery and shot at blindfold with a brown bess, or cut down with a pruning hook, wheat and tares coming down together. For centuries, however, intestinal parasites have been regarded as causes of disease. We find diagrams of ascarides in Solysel, and of tapeworms long before his time. Early in this century Bracy Clark figured the stomach bot. The subject of helminthology in anything like a systematic form received no attention from veterinarians in this country till taken up by Dr. Spencer Cobbold, to whose memory I should here like to pay a tribute of high esteem for the part he took in drawing attention to these tangible disease producing factors. The vigour with which Dr. Cobbold pursued the subject of helminthology is well known to us all, and I believe we shall all agree that we owe him a deep debt of gratitude.

Happily the study of animal parasites provides us with much knowledge that is applicable to every-day practice. Helminthologists, like bacteriologists, may be very enthusiastic, and sometimes inclined to attribute all diseases of animals to worms. Perhaps we may not all be able to go the full length with Dr. Cobbold and see, in the *trichina spiralis*, the "fiery serpents" of scripture but I venture to think the subject of parasitism is to us of very great importance, and one which will pay for a little more attention than is often accorded to it. I think we are coming to realise that in disease as elsewhere sequences must have causes. There appears to me a tendency at the present moment to too exclusively seek demonstration of them through the microscope and even in the test tube. I do not intend to imply that because the use of the unaided senses is perhaps neglected that the artificial aids to diagnosis etc. are less valuable, but it occurs to me that by fashion one may obscure the other. I am satisfied that anything which tends to lessen the confidence of the ordinary practitioner in making post-mortem examinations must have a deleterious effect on his practice. Most of the parasites of which I propose to speak to-day are visible to the naked eye, and I am disposed to the view that careful post-mortem examination by practitioners would have the effect of demonstrating animal parasites as more common causes of disease than we expect. The value of making post-mortem examinations and reporting the results to Associations of this character I think of great importance as bringing together the experiences of special districts. "One swallow does not make a summer" and the presence of a parasite may not allow us to say that disease is due to it. In connection with the presence of in-

testinal parasites it is important to have consideration for their numbers and the condition of the host. It is essential to know some of the fundamental facts of the life history or the habits of worms. A few parasites find a suitable soil in different species, but as a rule one species of parasite infests one species of animal. Again we know that a parasite may pass one phase of its existence in one species of animal and another phase is a different species, and induce disease in each. In some instances, notably that of the fluke, the disease is best prevented by interrupting the cycle outside the body, in bringing about such conditions as are unfavorable to the existence of the fresh water snail.

The conditions on which the presence of worms in the alimentary tract depend are of course affected by circumstances affecting their development outside the body. As a general rule moisture seems to be favourable to their increase, and it is found that parasitic diseases are specially prevalent in damp situations and in wet seasons. The present would appear to be an exception to the rule. Last year was specially dry and presumably unfavourable to the life of ova, embryos, and worms outside the body, yet I believe this spring helminthiasis has been extremely common. This is to be accounted for probably by the close grazing of last fall and summer, and the consumption, during the winter of close cut forage, mostly gathered from situations normally wet.

As a general rule disturbances arising from intestinal parasites are much more common in some neighbourhoods than others, and this for the foregoing reasons, but it is important that we should recognise that the ova and embryos of helminths may be introduced into fresh situations and remain there an abiding source of trouble. Manure, fodder and infested animals are I think common means of distributing such diseases. Dirty pools, grazing over sewaged meadows, etc. are perhaps the most dangerous conditions, but by the above means of distribution the horses in towns were almost as frequently the subjects of intestinal parasitism as those in country districts.

Intestinal workers injure their hosts or induce disease by consuming food, by extracting blood, by irritation causing catarrh, colic, diarrhœa, increased secretion and peristaltic action, nervous disturbances as vertigo, epilepsy, embolism, ulceration and blood poisoning, sometimes perforation and ruptures, mechanical impediment by large numbers, etc. The effects in most instances will depend on their numbers, and naturally on the habits of the worm. Some are bloodsuckers, and in addition to the ordinary effect of irritation induce anæmia of a very marked character. Some live free in the lumen of the alimentary tube, some are firmly attached to the mucous membrane, others bore their way through the membrane and pass part of their existence underneath it.

Professor Penberthy then proceeded to describe the more common intestinal worms inducing disease in the horse, ox, sheep, pig, dog, and cat, touching on points of practical value in connection with their life history, pathogenic effects, symptoms and treatment.

Commencing with the worms of the horse he first mentioned *The gastrophilus equi* or stomach bot, which in small numbers resides, during the winter months, in the stomach of the horse, without doing apparent injury to its bearer, leaving him in the late spring to become developed into *œstrum equi*. This parasite, however, may give rise to disease by thinning the walls of the stomach and predisposing to rupture, also by passing from the stomach in large numbers and causing impaction and even rupture of the bowel. It sometimes interferes with digestion, and induces general irritability and debility of the host. Its presence can only be definitely determined by appearance in the fæces. Solution of iodine, carbolic acid, and glycerine and turpentine the speaker had found most efficient remedies. Other bots infesting the intestines were brought under notice.

The strongylus armatus or palisade worm, in some countries credited with inducing 85 per cent. of the cases of colic in horses, was then described. The Professor said he believed that in this country this worm caused more disease than was usually attributed to it. It was in its adult state specially adapted for boring into the walls of the intestines, where it frequently existed in large numbers and produced great irritation. In its immature state it was supposed to reside in the arteries. It often induced aneurism of the anterior mesenteric artery, and serious intestinal disturbance by embolism, and by its wandering habits. Colic, anæmia and diarrhœa were among the most prominant symptoms induced by the adult worm. He had been surprised at the large proportion of aneurisms of the mesenteric arteries he had found on post-mortem. The lecturer exhibited portions of internal organs showing extensive embolism by these immature parasites, which had become calcified in various situations supplied by branches of the mesenteric arteries. This strongylus armatus is sometimes passed with the fæces, and examination of the dejecta was consequently of importance. With the older practitioners this practice was very common, and he believed much value attached to it as a means of diagnosis.

The strongylus tetracanthus was then introduced. This parasite, which from all the sources we possess for forming an opinion appears to have been formerly confined to certain low lying and wet districts, now had a wide distribution, and induced serious losses in town as well as country. Young horses were most commonly affected, probably because they grazed and spent their lives on pastures; but adult animals by no means escaped its effects. Little is known of its life history outside its equine host, but its habits of piercing the intestine, coiling itself up under the mucous membrane, and of blood sucking were dwelt on, as were the symptoms of anæmia, diarrhœa, general unthriftiness, pendulous abdomen, the presence of the small round worm in the fæces, etc. An outbreak of disease due to its attack in which ten animals had succumbed was described. Attention was directed to the fact that while this worm was of very small size it often produced serious effects. It then required careful looking for and something appeared like blood marking in the mucous membrane of the intestines. In the treatment of this condition the Professor attached great importance to the necessity for keeping the animals warm and avoiding drastic agents.

The Ascaris Megalocepha and the tapeworms though in small numbers doing little appreciable harm, in larger numbers induced colic, vertigo, etc. Epizootics of disease due to these worms were described.

The intestinal parasites of the other domesticated animals, particularly the strongyle producing diarrhœa and anæmia in cattle, the *tænia expansa* and *strongylus contortus* of sheep, *ascarides* of the pig, dog, and cat received a share of attention.

Professor Penberthy spoke as to the value of drainage, the disuse of dirty pools, the use of lime and salt on pastures, the latter as an article of diet, the importance of not grazing pastures infected with parasites with animals which are naturally their hosts, and also of the necessity for the frequent use of medicines of a vermifuge nature, even among apparently healthy animals. The properties and applicability of various anthelmintics were discussed. Numerous specimens of each of the parasites were exhibited.

Discussion.

Mr. Trigger said the subject was rather difficult for them to grasp, but that the parasitic life played an important part with the diseases of animals he thought

was a fact they would all recognise. Referring to the simple subject of bots the lecturer had told them they would produce stoppage. Only a few months ago he was called upon to make a post-mortem examination of a colt, yew poisoning being the expected result. He was very much at a loss to find the cause; he would not say he did find it, but what he did come across was a very bad condition. There was perforation in the mucous coat of the stomach and in many other places. He took the piece of the membrane so attached and sent it to Prof. McFadyean from whom he had received a reply stating that he had showed the specimen to his class, and that there was no doubt that bots had produced the perforation. He did not agree with the treatment of calves as at present advocated. He thought as long as they were left on the pastures at night they would do no good and no success would attend the treatment. He believed the proper thing was to give the animal something which would nauseate them and they would then pass away.

Mr. COE said he would like to ask Professor Penberthy the best treatment of disease due to strongylus tetracanthus.

Mr. WARTNABY also joined in the discussion and said he thought very differently now with regard to parasites than what he had thought before. As tobacco had been suggested he would like to ask the professor whether he would give it by the mouth or only as an enema. His experience with regard to calves was that if you get a late one which is delicate, if once the parasites get hold of it it was sure to die. With regard to sheep, hundreds were lost through the ravages of the parasites, when at home he used to winter about 250 lambs, and for the past four or five years they lost about 50 lambs from this disease. It would carry off some of the stronger lambs and leave a good many of the weaker ones. He almost differed from the Professor with regard to fits in pigs which he understood him to say were always due to parasites. Several weeks ago he was called to some young pigs and was told one had died and that four more of them were attacked two or three times a day. After making some inquiries he learned that some of the pigs had fits about the same time the year before, and that they were locked up in a stye and not allowed to run. The owner put a bucket of wash in a trough and the pigs were immediately seized with the fits. He gave them a dose of sulphate of magnesia and changed the food and after giving them more exercise they were never subject to them again.

Mr. MASON said he had no special remarks to offer but he could only endorse and thank the professor for the extraordinary statements he had brought before them. He took a great interest in the dog and knew that the intestines of the dog were sometimes one mass of parasites. He had listened attentively to the address and was only sorry that he could not enter into the details.

Mr. CARLESS said it had given him very great pleasure to listen to the very instructive address. He felt quite like a student again in hearing details of the disease. These had called to mind very vividly lots of instances he had met with in his practice which the professor had described, and during the last spring cases of very considerable importance came within his practice, the parasites being the cause. The worms had produced ravages which generally ended in death. What they would have to do was to build up the system by administering blood-producing foods, and small doses of medicine which were calculated to make the habitat of the parasite objectionable—too distasteful for it to stop. One thing was absolutely necessary, and that was to change the circumstances of the animal as living in at the time, and also to give them one kind of food which must be the best adapted for it. He fully endorsed the remarks made by the Professor to the effect that warmth was necessary in the treatment of animals.

The PRESIDENT then summed up the discussion. He said the Professor's address was one of the most interesting he had ever heard. Like Mr. Carless he felt again a student, although he admitted he had forgotten some of the names of the parasites. He was particularly interested in one of them, viz., the strongylus tetracanthus he having had several outbreaks of disease caused by this parasite.

In reply Professor Penberthy said it was not necessary for him to say that he had not attempted to exhaust the subject, which would provide material enough for a four years course. He had only tried to touch on a few points which he regarded of special interest to the meeting. In reply to Mr. Trigger he thought chlorodyne was an authelmintic partly by virtue of the peppermint it contained. In Mr. Coe's case of disease due to strongylus tetracanthus he would keep the animal at rest as it was necessary to conserve the animal's strength. Small doses of turpentine in milk, and preparations of iron, in conjunction with artificial heat were among the best curative measures. Referring to the remarks of Mr. Wartnaby he had often seen epilepsy in pigs associated with ascarides. In the administration of tobacco as an authelmintic some care was necessary, the speaker usually commenced with four or five ounce doses of an infusion of one part of tobacco to twenty of water. He was very pleased to listen to the remarks of Mr. Carless; he agreed with this gentleman as to the advisability of changing animals from low-lying lands infested with worms, but it was necessary to exercise some discrimination. Great good was likely to follow moving animals on to high land when conditions did not favor the life and development of worms, but there was some danger in removing infected animals on to pastures and places where conditions favorable exist of contaminating them.

In conclusion Professor Penberthy said he was very pleased to have had the opportunity of coming down to the meeting, and very grateful for the kind manner in which they had received his rambling remarks on this subject. (Applause). He hoped it would have the effect of exciting an increased interest in heliminthology, as he would venture to state that there was no study more likely to repay the practitioner and to allow his services to effect greater good. (Applause).

On the proposition of Mr. Jones seconded by Mr. Smith a vote of thanks was accorded to Professor Penberthy for his address.

The SECRETARY moved that "our hearty thanks be given to the president for his address, and that he allow it to be printed together with that of Professor Penberthy.

Mr. WARTNABY seconded and the motion was carried.

The CHAIRMAN said he was much obliged for the vote of thanks.

The company afterwards sat down to a knife and fork tea, and a pleasant evening was spent.

H. J. DAWES, *Hon. Sec.*

SOUTHERN COUNTIES VETERINARY MEDICAL ASSOCIATION.

A meeting of the Association was held at the Royal Hotel, Southampton, on the afternoon of Thursday, the 28th June. The meeting was preceded by a luncheon at which the only toast given was that of Her Majesty the Queen, proposed by the President (Mr. T. B. Goodall, Christchurch), with appropriate reference to Coronation Day, and to the birth of the infant prince. At the meeting the President presided and amongst those present were Messrs. J. D. Barford, J. W. Barford, and C. J. Gould, Southampton; J. T. Burden, Beaulieu;

J. B. Tutt, Winchester; J. F. Simpson, Maidenhead; J. T. King, Bournemouth; E. W. Baker, Wimborn; J. V. Blake, Ryde; and C. Pack, Lymington; Hon. Sec.

Letters of apology for non-attendance had been received from Sir Henry Simpson. Professors Edgor, Axe and Penberthy, and Messrs. Redford, Golledge, Knott and Carter.

Some time was occupied in observing specimens of bacillus anthracis, shown under microscopes by the President and Secretary, (the slides of bacilli anthracis were lent by Prof Penberthy); the President also showed specimens of parasitic acari.

Mr. J. B. Tutt of Winchester, showed as a morbid specimen three large calculi which he had taken from a horse which had died under his charge, and stated that although the calculi were very large the horse had worked well and shown all the appearances of perfect health up to a couple of days before its death. An interesting discussion followed.

The President showed the skull of a horse which had no turbinated bones on one side. In order to more clearly show the malformation he had made a section of the skull, and he also showed a section of a normal skull. The case, he said, was that of a seven years old forest pony. After the death of the animal food was found firmly impacted between the last two upper molars of the left side, the impaction extending low down into the alveolus and sinus, the last tooth being in consequence turned round in its alveolus, the normal outer aspect of the tooth facing backwards. There were no turbinated bones on the left side, the nasal chamber and the sinuses being continuous. The maxillary turbinator was represented by a fold in the mucous membrane and erectile tissue only. There was a firm, bony tumour or growth which had been adherent to the septum and thus occluded the olfactory and sinus meati, the lower or respiratory meatus being alone free. The ethmoidal turbinator was represented by a fold of membrane and erectile tissue extending the whole length of the nasal chamber. The bony tumour which originated from the inner face of the superior maxillary bone at a point corresponding to the anterior edge of the infra-orbital foramen, has no connection with either of the turbinals, but is evidently a substitution for the large free cell usually found at the inferior extremity of the maxillary turbinated bone, and on closer inspection all the outer aspect of the maxillary bone is marked by elevations and depressions, pointing to the probability of the animal at some time of its life having been the victim of a serious accident. The bony tumour corresponds to the place of the normal attachment of the maxillary turbinator to the maxillary bone and is hypertrophied and exaggerated, probably that nature may thus protect the otherwise exposed sinuses from the deposition in them of foreign matters. In life the pony had been totally blind in the off eye. The mare in apparent health, had been at œstrum and had been turned out with a stallion. She had been partially broken in. On the morning of the 15th April she was seen to be feeding and well, but it had been noticed that she was in a state of excitement. At about 5 p.m. she was found down in the field and unable to rise. Mr. T. B. Goodall saw her at 8.30. The pulse was normal and there was no symptom of pain. As she was unable to rise he had her moved over on to her other side. This induced a regular epileptic fit, the limbs being stretched out so rigidly that he half suspected tetanus, and gave the mare chloral. She was easier the next morning, but a movement from one side to the other induced a return of the nervous excitement, as did also any noise. At times her legs would keep in motion as though she were trotting and galloping, and then they would be extended stiff and rigid. He had then come to the conclusion that all the symptoms were due to exceptional nervous excitement, with some possible injury to the brain in her futile endeavours to rise. The pulse was still normal, and he continued the chloral. On the 17th the mare was much easier and ate and drank freely, so he discontinued the chloral and made an attempt to sling her, but when up she had no use in her legs whatever, so he let her down again. On the 18th the mare was worse, the pulse getting irritable and quick, and he advised that she should be destroyed. After death he made an examination, and after finding the abnormalities mentioned in the teeth, and in the nasal chamber and sinuses, and considering also that she had been blind, he was vexed to think that the brain had been shattered by a charge of shot, for it was more than probable that some abnormality would have been found to account for the paralysis, and which would have made the case much more interesting and instructive. Whether he would have made a more satisfactory diagnosis if he had seen the mare under more favourable circumstances he could not tell, but it must be remembered that she was down in an open field when he first saw her, and it was only with the aid of a lantern, very dimly burning, that his observations were made, though from the first he had no hesitation in attributing all the symptoms to nervous derangement. The point of most importance was that in this case there was practically no division between the nasal chamber and the sinuses.

Through the kindness of Mr. C. H. Huish and J. V. Blake, Esq., M.R.C.V.S., of Ryde, the Secretary was able to place before the meeting the Blake castrator and the Huish-Blake castrator.

Mr. Blake, who was present, spoke of the excellent results he had since he had adopted the instrument for castrating all kinds of animals, and answered many questions put to him by the members. At the close hearty thanks were accorded Mr. Blake and Mr. Huish for their kindness.

New Members.

Mr. A. J. Blake, of Bournemouth, and Mr. R. W. Dawtrey, of Chichester, were nominated for membership of the Association.

Insurance Companies and Examination Fees.

At the close of the exhibition of morbid specimens the meeting proceeded to the consideration of the circular letter which had been sent from the Eastern Counties V.M.A. respecting the fees usually paid to veterinary surgeons by insurance companies. (This has already appeared in our pages.)

Mr. J. W. Barford said he could speak very feelingly on the subject. He was veterinary surgeon to an Insurance Company and he had been asked to make an examination. He had travelled miles to make the examination, and he had spent 4s. and all he had got from the insurance company was 3s. (Laughter.) He thought they ought to be protected. He wrote and told the Company that he would not go again. He did not know whether any other gentleman had had an experience of the same kind, but he thought it was far from right that they should be taxed with that kind of thing.

Mr. Simpson sympathised with the remarks of Mr. Barford, and to make the discussion regular he moved the following resolution:—"That the members of this Association regret that insurance companies cannot see their way to offer veterinary inspectors a proper remuneration for the examination of horses and cattle for insurance."

Mr. C. J. Gould seconded the proposition. He had been to Beaulieu Green to make an examination one Sunday night. The tolls had amounted to 1s. 2d. and he had spent four or five shillings, but the insurance company would only give him half-a-crown. He thought they should demand their proper fees. If the examination was worth anything it was worth paying for. To

travel eight miles to make an examination and to receive half-a-crown was absurd.

Mr. PACK said he thought they were all of one mind with respect to the inadequacy of the payment, but after all the insurance companies were candid. They told you what the fees were, and if the members of that Association said they would not accept them, the insurance companies knew that there were other people who would.

Mr. BARFORD: They don't think of the distance we have to travel. They do not know.

Mr. PACK quite agreed with the remarks as to the smallness of the payment. He was asked to go four miles from Lymington to examine a cow, that cow was in the last stage of tuberculosis. He sent word that it was not a fit subject for examination. He did not tell them the reason why, but they sent him a fee of one-and-sixpence. But sometimes it was a matter of obliging a client as much as the insurance companies.

Mr. J. W. BARFORD: Don't you think they should be made acquainted with the distances. In two cases I had to go the other side of Bursledon Bridge. It cost me 1s. 10d. and I received a fee of two shillings. I think it is absurd.

Mr. PACK said that was better than what had happened to him. He had once gone a considerable distance to make an examination of a cow that was proposed for transfer of insurance policy, and he had charged half-a-guinea, but they had sent him only a shilliug. He wrote back for an explanation and the company replied telling him that the whole premium paid for the cow was one-and-sixpence and they had sent him the lion's share of that. (Laughter).

Mr. KING said that he was requested by an insurance company to make an examination at a place called Heathfield Brickyard, in Dorsetshire, which he believed to be in another inspector's district. At any rate it was a very considerrble distance from Bournemouth and the fee was to be two shillings.

Mr. TUTT said that he had been called upon by Mr. Shenton, of the Imperial Insurance Company, at Winchester, who asked him if he would be a veterinary inspector under his company. He asked what the fee was, and when he was told that it was three-and-sixpence he absolutely refused.

Mr. J. W. BARFORD:—And I don't blame you either.

Mr. SIMPSON said that it was very well known that insurance companies had to take very small premiums considering the risk they ran, although it was a large one if the insurance was not called for, and they could not go to the expense of the ordinary guinea fee, and if they did not accept the terms of the companies others would do so readily. (Hear, hear). It gave some sort of status to a man to hold the appointment of inspector to a live stock insurance company however small the fee might be. He did not see that any good could come of passing a resolution, unless it was one such as he had proposed, to the effect that the Association regretted that the insurance companies could not see their way to paying the veterinary inspectors a more remunerative fee. If a resolution of that kind could not do any good he could not see how any good could be done. The insurance companies were obliged to take small premiums in order to get insurers to take out policies in their offices, and they could not afford to pay the ordinary fee for inspection. It was a matter of business. He would only advise members of the Association to make the best terms they could with the companies. It was not an uncommon thing in the medical profession for fully qualified men to take small fees. He had in his mind a gentlemen, a fully qualified medical man who had printed on his blind, "Medicine and advice, one shilling." That man was in practice now, but, to use a common expression, he had "got his foot in," and he had removed the blind and now charged the same fees as any other practitioner. He failed to see what could be done by the Association. It was a matter for individual members to make their own terms with the companies, and if any member found that it was being used to injure his practice in his locality let him simply decline it.

The PRESIDENT said that his own view was that the matter was a purely voluntary affair between the veterinary surgeons and the insurance companies. They were not compelled to take the fees. He had been entirely against the insurance companies until a few months before, when a secretary and manager called upon him and explained that the company did not wish him to make special visits and exhaustive examinations, but simply to see a beast when he was in the neighbourhood and to tell the company whether it was healthy or not. That was all they wanted. He replied "If that is it I will examine when I am in the neighbourhood." He certainly did not intend to travel five miles to make an examination.

Mr. J. T. KING said that in some cases the companies asked for valuations. If it was to be understood that any sort of an examinalion would do that would put a different complexion on the matter.

Mr. GOULD:—But if the animal dies the next week you will have to pay for it.

The PRESIDENT:—They cannot afford to pay us full fees, and I do not think that any protest will do any good. The companies cannot afford to pay any more. He was exactly of the same opinion as the speakers who had preceded him—that they were inadequately paid by the Companies, and he did not intend to put himself out of the way to make the examinations. He had had notice to attend an animal but he had not been in that neighbourhood for some time, and he had had a letter from the insurance company asking him why he did not make the examination.

A member suggested that if they refused to do the work outsiders would take it, and they ought to keep outsiders from doing the work.

The resolution given above was then put to the meeting and carried *nem dis.*

PRESIDENTIAL ADDRESS.

Mr. T. B. GOODALL, F.R.C.V.S.

The PRESIDENT said that he observed that there figured on the agenda the words "President's address" and it would be necessary for him to detain them a little time. But happily it was not necessay for him to say a great deal, because Mr. Hunting, in the last number of *The Veterinary Record*, had given a history of the profession during the last fifty years, and it was really a history of the life of the profession during that time. In the few words he would say to them he wished to emphasise the fact that their profession consisted of individual members, and although the body might grow healthy and lusty, and present all the appearance of success, yet the object for which such a body as this Association was formed was to improve and maintain the status of the profession to which they belonged, and this must depend upon the conduct of individual members of the body. Wherever a veterinary surgeon was placed he should strive to make himself looked up to by those around him, and to cause himself and his profession to be respected. They must show themselves worthy of the responsibility that was placed upon their shoulders, and that they had the welfare of the animals under their charge at heart. It was not a mere question of fees, although the question of remuneration was one which ought not to be disregarded by members, but it was a question of the honour of their profession. In the first place they should show that they were perfectly com-

petent to treat disease, and he thought it was generally acknowledged that they were so. And they should not allow themselves to take a low position in the society in which they moved. Their motto should be "Excelsior." Although this might bring them a feeling of loneliness, yet he would urge upon them to persist in it, and to refuse to mix in company lower than themselves. If they held themselves aloof from lower company, and mixed only with educated men and gentlemen, they would increase the prospect in which the profession generally was held, and they could not do that if they lowered the standard of their associates. They should always keep in view the desire to raise themselves And that brought him to a question that concerned the profession—the granting of the Fellowship degree. The degree was a splendid thing. It was something that a man could look forward to as he advanced in life. When the degree was first granted there were certain privileges attaching to the holding of them, and amongst others the eligibility to serve on the Council. But after they had passed the Fellowship examination they were calmly told by the Council that these privileges were taken away from them. That was a distinctly retrograde step, and this was shown by the fact that this year only three Members presented themselves for examination for the degree. He thought that was a mistake, and he trusted that it would be rectified. There was another question that he wanted to touch upon, and that was the four years' course of study. The question arose "was the profession worth it? If to be a Member of the profession was to be worth the money that they must spend to get into it, they must endeavour to raise it to the position of the sister medical profession. Here again he came to the question of the conduct of individual members as the only lasting manner in which the status of the profession could be raised. A good motto for each of us in this year of our Jubilee, and taken from the old Book is—"Not as though I had already attained, either were already perfect."

And with regard to country practitioners who, as he had said, ran some danger, because of the loneliness of country life, of finding companionship in society which was not of their own level, and in order to avoid that danger there was nothing in the world like taking up a hobby of some kind, something which in one's leisure hours would compensate for the lack of company. If they took up a hobby it was surprising the amount of interest and beauty and pleasure of life that they could get out of it. For himself he never found time for idleness, but whenever he had five minutes to spare he occupied them in continuing his studies.

Since he had taken up his hobby, life had passed more pleasantly with him, and he felt that he was doing some little good in his day and generation. He had had the privelege of preparing a series of horses' teeth for the British Museum, and had received much encouragement from Sir William Flower. That was the kind of satisfaction one got from his hobbies. (Applause). What they wanted to guard against was the settling down and doing nothing new. He remembered that when he had his diploma he thought that there was nobody like him in England, but he soon found out how very little he really knew. They should always be taking up something, always be learning something. They should never sit down as though they had done their work, as though they had "already attained." Let them bear in mind the word from the good book "It is the glory of God to conceal a thing, but the honour of Kings is to search out a matter," and when they had discovered anything, let them publish what they had found; let them tell it to their fellow members of the association. Their light would shine none the less by communicating light to others. If they did this they would have the satisfaction of knowing that they would make the profession better than they found it. In conclusion he would thank them for having given him that honourable position in the association. He trusted that they would have a good year, and that the members of the association would support the meetings better in the future than in the past. (App.)

On Anthrax, by Professor Axe.

Discussion.

Mr. Pack, in opening the discussion, said although anthrax could be produced on any soil he thought it was much more likely to occur on low-lying grounds. His experience was that the susceptibility of animals on low-lying grounds was greater than those feeding on higher pastures. His opinion was that the low-lying lands were favourable to the developement of the anthrax germs. And he thought that the spores might exist in such pastures from year to year, for when a case of anthrax occurred it was often found to be in pastures in which there had been previous cases. It was remarkable how fatal the disease was amongst animals. When anthrax attacked a human being it often became localised and could be treated locally, but in animals it usually became generalised. He thought that animals most frequently became infected through the alimentary canal or in the neighbourhood of the throat. He thought so because they had seen in animals standing side by side that one would be taken with the disease and none of the rest would have it. So that he thought the disease was more likely to be taken through the alimentary tract than by inhalation. Still, it was possible that the disease was conveyed by flies which might carry the bacilli from one animal to another.

The President pointed out that this was a fallacy. The fly that stung was not the same as the one that sucked juices from a wound.

Mr. Pack said that that might be so, but a fly alighting on a wound on one animal and again on a wound of the next might carry the contagion from the blood of one to the other. With regard to the recognition of anthrax it was most important that they should have an early means of detecting this, At present it was only possible to be quite certain when the anthrax bacilli were observed under the microscope. Then with regard to slaughter. They had heard a good deal not long ago about the advisability of slaughtering cattle, but he could never see any reason why sixty or seventy head of cattle on a farm should be destroyed because one or two animals had died of anthrax. He had known one farm where, if this had been done they would have had to slaughter 150 beasts which were perfectly healthy. Professor Axe thought if it was necessary to kill beasts the quickest and the most painless was by the injection of hydrocyanic acid into the system. Prof. Penberthy was of that opinion. Mr. Redford did not consider that was necessary, but said that if they stood some distance from the animal and shot it direct there would be very little blood. He (Mr. Pack) found the same thing. He had shot a bullock standing twelve yards off, a few days since, and there was no blood at all. It was not necessary to have a great deal of blood when shooting an animal. As soon as the animal was shot it was necessary to get rid of it at once. Cremation was the best plan but if that could not be obtained the next best thing was to bury the body as deep as possible in quicklime. There should not be any opening of carcases. With regard to the spread of disease he felt sure that the germs of anthrax continued in the grass for as long as eighteen months or a couple of years. They very seldom had a case of anthrax at Lymington but when they did it was always found in the same place where there had been cases of anthrax before. They were told that quicklime was a remedy, but how could

they effectually quicklime a forty-acre field. The methods adopted for prevention must be very wide.

Mr. SIMPSON said that in the locality in which he resided anthrax was almost unknown, although Professor Axe said that the disease was now on the increase. Professor Axe had laid great stress on the importation of foreign hides and the cleansing of foreign wool in some localities as a frequent cause of anthrax. In his locality there were neither hide factories nor wool-preparing factories, and he was inclined to agree with Professor Axe on this point, that anthrax was largely caused by these industries, or at any rate that these industries had a great deal to do with it. Professor Axe had also said in reply to a remark made by Mr. Singleton, that it was necessary to take action with regard to the importation of foreign hay. Whether the spores could be carried from a foreign country to our own in foreign hay was a question he (Mr. Simpson) was not in a position to answer, but taking into consideration that they had been shown by the President, certain acari which he had obtained from foreign hay, it was a question whether it were not advisable in the interests of agriculture, to prohibit the importation of foreign hay. On account of the scarcity of English hay they had been having foreign hay during the last twelve months and perhaps there was some connection between the increase in the quantity of foreign hay and the increase in the cases of anthrax. With regard to the germs of anthrax living on certain lands for a length of time, he might say that the only cases which had occurred in the county of Bucks in the last twenty years had occurred in the same neighbourhood. In the last outbreak a bullock was the first to be affected, then a horse, and then a dog, although a dog was supposed to be proof against this disease. There was no mistake at all about the cases being anthrax, and they occurred on low-lying grounds. With regard to the early history of the disease, he knew of no accurate guide as to diagnosis, and as far as he knew it was impossible to say until after death whether the disease were actually anthrax. But he should say that a previous case of anthrax having occurred in a herd the rising of an animal's temperature to 105 degrees might be taken as a sure symptom of anthrax, and it would be perfectly safe to destroy it as a subject of anthrax. It was extremely unfortunate that the anthrax bacillus did not make itself observable until about the time of the death of the subject. What the anthrax bacillus was like under the microscope they all knew from the excellent specimens that had been shown them that afternoon, and there should be little or no difficulty in determining whether the animal had died from anthrax or not. In the early stage of the animal's sickness it was possible to mistake for anthrax the less severe disease which was known as "black quarter" but they had had it explained to them that the anthrax bacillus had slightly rounded ends, whereas in the disease known as black quarter the bacillus had distinctly rounded ends. But unless they had perfect forms of each bacillus a beginner in microscopical work might easily be led into mistaking one for the other. As to preventive measures, Professor Axe had spoken of making use of attenuated anthrax virus, and in connection with this there was an extremely interesting paper read at the last meeting of the National Association by Mr. Dollar, and he had quoted from undoubted authority that an ox treated with this attenuated virus had been rendered immune to anthrax. In his method of preparing this attenuated virus he had begun on a sheep, and then on a guinea pig, and so he went on attenuating the virus until he reached the lest susceptible of all animals, the mouse, and then he had returned to animals higher in the scale. He had pointed out the importance of understanding this disease because it was so easily communicated to man. As a proof of the possibility of its being so communicated he would mention that at their last meeting there was a gentleman present who had been a victim to anthrax. Fortunately nature was so kind that in the human system anthrax was not so dangerous as in the lower animals. In a human being it was localised and it might be treated locally. The gentleman to whom he referred was a member of their own profession, and he caught the disease in the course of his professional duties. But the disease was localised, and was treated locally, and he was happy to say that their friend had made a good recovery. As to the making use of the meat affected by anthrax, no doubt it was highly improper. The sooner an animal dead of anthrax was burned or buried the better, and as burning was so much better than burying, he thought it was the duty of the authorities to provide portable cremation apparatus for the effectual burning of the bodies of diseased animals. In the absence of such means the best way was to get the animal as far underground as possible as quickly as possible, burying the body in quicklime. With regard to the destruction of animals he though that the better way was to inject prussic acid into the jugular vein. But that was a very wide subject upon which every member of the Association possibly had different opinions. He regretted that Professor Axe had not been able to be amongst them that afternoon that he might defend the paper which he was so good as to read at the last meeting. He hoped that at the termination of the discussion a very hearty vote of thanks would be given to Professor Axe for that paper.

Mr. BAKER hoped that the County Council would take some steps to provide a portable cremating apparatus for use in the destruction of animals which had died from anthrax or from any other disease for which it was necessary to obtain a speedy destruction of the body, which was far better than the method of burying the bodies in shallow graves with a mere sprinkling of quicklime. In nine cases out of ten the method of burial was not properly carried out. If they destroyed a body by means of fire they knew that there was no possibility of future infection. He certainly thought that every county should have such an apparatus. He did not know what the expense of each apparatus would be, but he did not think it would be so great as to be prohibitive, and the apparatus would do for other infectious cases such as swine-fever, etc.

Mr. J. D. BARFORD said that unfortunately for himself he was not present at the previous meeting when Prof. Axe read his paper, or he would have gone more deeply into the subject, which was of such vital importance to agriculturists. But he would take that opportunity of saying that in electing their friend to the chair they were doing the right thing. (Hear, hear.) He should certainly have been very sorry if their friend had been passed over. He was a gentleman exceedingly worthy of the position and one who had gone more deeply than most of them into the scientific matters he had touched upon that afternoon. With regard to anthrax he had had very little experience of it; Mr. Redford had had more experience perhaps than any of them, and had been an eye-witness of the destruction of 160 head of cattle. He could not trace any single case of anthrax to imported hay, but he felt that that was a very probable cause. It behoved them as professional men to be very careful in their manipulation of this disease lest they might inoculate themselves. They had already seen a case of one member of their Association who had been very nearly losing his arm. They could not be too careful.

Mr. J. W. BARFORD was sorry that he was not present at the reading of the address by Professor Axe at their last meeting, for he would have liked to have heard what was suggested for preventing the disease.

The PRESIDENT said that as to the question of the

value of attenuated virus it had been successfully used on animals on the continent, and those animals had never been attacked while others close around them had been. There had been cases in which virus had been used which had not been properly attenuated and had caused the death of the animals upon which it had been used. As for the spores of anthrax they could exist on grass, potatoes, or on leaves. When an animal was killed a very small portion of the spores existing in a field were killed. Professor Axe, in his paper, had expressed the opinion that the bacillus of anthrax was taken in with the food of the animal while those of pleuro-pneumonia were taken in with the air breathed, so that it seemed to him that slaughtering, though of great value as regarded pleuro-pneumonia, was not of much use to prevent the spread of anthrax. But there were one of two points in Prof. Axe's paper that were not quite clear. He was not sure whether the Professor was in favour of moving a herd in which anthrax had been discovered or whether he was not. He, the President, considered the prohibition of movement from an infected place a great mistake. The professor admitted that disinfectants were useless, and yet he advised their use. His own opinion was that they would find out more about anthrax by a closer study of the insect and the vegetable world. They knew that the animal and the vegetable worlds were interdependent, that what one gave off the other took up, and he was inclined to think that the safeguard against anthrax might be found in the larvæ of dipterous insects and in the vegetable kingdom, and he would suggest a trial of the planting of woods on those areas on which cattle were commonly attacked, as a preventive measure.

Mr. SIMPSON said that Mr Barford had asked to have the statistics to show that vaccination was of any use in preventing anthrax. He had Mr. Dollar's paper with him which showed the results in France. In the year 1882 22,916 cattle were vaccinated, and amongst these the death rate was ·35 per cent, although previously the death rate had been five per cent. In the same year 243,199 sheep had been vaccinated and the death rate was 1·08, although the death rate in the previous year had been 10 per cent.

Mr. J. D. BARFORD moved, and Mr. J. V. Blake seconded a vote of thanks to Professor Axe for the paper which he had read at the last meeting, and the vote was carried unanimously, as also was a vote of thanks to the chairman, proposed by Mr. J. F. Simpson, and seconded by Mr. J. T. King.

The question of the place of the next meeting was considered, and on the motion of Mr. J. D. Barford it was decided to hold it at Basingstoke.

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

The quarterly meeting of the Lancashire Veterinary Medical Association was held at the Grand Hotel, Manchester, on Thursday, the 21st June, 1894. Tea at 5 p.m. and business at 6 p.m. There were present the president, G. Gartside Mayor, Esq., in the chair, Messrs. W. A. Taylor, Wm. Woods, R. C. Edwards, Lieut. Meredith, J. B. Wolstenholme, E. E. Wood, Wm. Ackroyd.

Mr. W. A. TAYLOR proposed, and Mr. Edwards seconded, that the minutes of the last meeting be taken as read.

Mr. WOLSTENHOLME (in the absence of the Secretary) intimated that he had a number of letters of apology for non-attendance from members.

ELECTION OF MEMBERS.

On the proposition of Mr. R. C. Edwards, seconded by Mr. W. A. Taylor, Mr. F. B. Pearson, M.R.C.V.S., Chesterfield, was elected a member of the Association.

Mr. J. B. Wolstenholme proposed, and Mr. William Woods seconded the election of the following members: Mr. J. T. Priestner, M.R.C.V.S., Manchester, and Mr. Ernest E. Wood, M.R.C.V.S., Eccles.

Mr. J. B. WOLSTENHOLME exhibited a morbid specimen of a number of liver flukes in the bile ducts of a cow which was with calf.

INSURANCE COMPANIES AND EXAMINATION FEES.

Mr. WOLSTENHOLME read the circular letter which had been received from the Eastern Counties Veterinary Medical Society submitting resolution on the question of the fees usually paid by the insurance companies to veterinary surgeons.

Mr. WOLSTENHOLME moved that the communication be laid upon their table and that the Secretary of the Eastern Counties Medical Society be written to that effect.

Mr. W. A. TAYLOR moved the following resolution:—"That whilst sympathising with the general tenor of the resolution passed by the members of the Eastern Counties V.M.S. this Association deems it unwise to interfere between veterinary surgeons and clients in the matter of fees payable to the former."

"ON NEW VIEWS AND OLD PRACTICE," BY PROF. PENBERTHY.—DISCUSSION.

Mr. WOLSTENHOLME, in opening the discussion, said: Mr. President and Gentlemen, as I listened to Professor Penberthy's paper I seemed to be impressed with the idea that he was raising the old methods of thought and treatment to too high a platform, particularly when he referred to the treatment and drugs of a hundred years ago as being still the sheet anchor of the veterinary surgeon. When, however, I came to read the paper I found the controversial points so beautifully balanced—in the accountants' sense—and fenced off, that it was impossible to assail them. Thus if on the one hand praise is given to an older method it is promptly condemned on the other.

The paper as a whole comes to me as a plea for *clinical* work, and as such I think it merits the sympathy of all veterinarians. Yet whilst pressing this plea the Professor gives abundant evidence of the painstaking clinical observation of to day. Bacon's dictum as quoted by Ericksen that "They are the best surgeons which being *learned* incline to the traditions of experience, or being *empirics* incline to the methods of learning," seems to apply with full force yet; for the practice of medicine is still a long way from being a definite science—much is art, much is empirical. I think that the achievements of the last 50 years in medicine are marvellous, whether in the domain of clinical study or laboratory observation and experiment; and that the demand for the clinician is greater than ever.

The paper by causing us to pause and take note of these advances does excellent service, showing the ground already covered and pointing out that which is beyond. I would ask, how precise is our knowledge of such affections as mechanical phthysis, *vide* needlegrinders' lung, verminous bronchitis, liver fluke disease, echinococcus disease, anthrax? and I may point out how disease is being subdivided and differentiated; how mechanical aids to diagnosis and surgery are being multiplied; and how theraputics and pharmaceutical advances are being pressed forward every month.

In conclusion I would express my thanks to Professor Penberthy for the pleasure and profit I have derived in perusing his paper, mingled possibly with some regret that I have failed to find material which lends itself to the purpose of a practical discussion.

Mr. W. A. TAYLOR in proposing a vote of thanks to Professor Penberthy for his excellent address stated that so far as he had been able to follow his remarks they were an eloquent statement of the history of veterinary medicine and surgery along with that of human medicine and surgery from the earliest times to the present day. There was a good deal of matter with which all the members must agree and a modicum to which we cannot assent, and if it was Professor Penberthy's intention to stir the members up to increased vigor in their observations as clinicians he did not blame him for it. He confessed that there were times when the veterinary surgeon was so pushed that he did not observe cases perhaps as critically as he would wish, but that was rather the fault of the practitioner having a good deal to do than the fault of his inclination. There was no doubt that the most valuable book for the members to read was nature's book—nature in health and nature in disease—and a veterinary surgeon finds irrespective of any other books that the man who uses his faculties of observation to the greatest extent usually makes the most successful practitioner. He had pleasure in proposing a vote of thanks to Professor Penberthy for his very interesting discourse.

Mr. WM. WOODS seconded the proposition.

Lieutenant MEREDITH said he would have to say good-bye to the members, and tendered his best thanks for the kindness shown to him by the Association.

The PRESIDENT on behalf of himself and the members said they had always been very pleased to see Lieutenant Meredith at the Association's meetings for he was a good and popular member of the Association, and he felt sure he would carry with him in his new sphere the good wishes of their members.

Mr. W. A. TAYLOR proposed that a letter of condolence be issued from the Association stating the sympathy of its members with Professor Walley and Mrs. Walley in their recent sad bereavement.

Mr. R. C. EDWARDS seconded the proposition.

SOUTH DURHAM AND NORTH YORKSHIRE VETERINARY MEDICAL ASSOCIATION.

A meeting of the Association was held in the Wear Valley Hotel, Bishop Auckland, on Thursday June 21st, 1894, at 3.30 p.m. Mr. J. G. Deans, President, in the chair. There were also present Messrs. F. R. Stevens, W. T. Briggs, Geo. J. Harvey, C. G. Hill, and C. T. Holmes, Darlington; H. H. Roberts, P. Snaith and J. R. Crone, Bishop Auckland; H. Snarry, York; G. E. Gibson, Ferryhill; and W. Awde, Stockton-on-Tees. Visitors: Messrs. H. Thompson, Aspatria; J. Armstrong, Penrith; E. R. Gibson, Barnard Castle; T. Lanchester, Bishop Auckland; Fred. Hood, West Auckland; and Messrs. Waddington and Thompson, Bishop Auckland. An apology for non-attendance was received from Professor Walley.

Mr. HARVEY proposed and Mr. ROBERTS seconded the confirmation of the minutes of the previous meeting. Carried.

A vote of condolence with Professor Walley on the death of his son in India was proposed by Mr. Deans seconded by Mr. Hill, supported by Mr. Armstrong, and carried unanimously.

Mr. HARVEY produced two calculi, the first being a phosphatic one taken from a 13½ hands pony and which weighed 6½ lbs; the other a dust one from the colon of a cart horse which died from intestinal troubles.

Mr. THOMPSON exhibited his tooth forceps, and also those used by him for removing the crowns of molar teeth from both horses and cattle, likewise a set of parturition instruments.

INSURANCE COMPANIES AND EXAMINATION FEES.

The circular letter from the Secretary of the Eastern Counties V.M.A. was read, respecting the fees usually paid by insurance companies to veterinary surgeons. After several members had spoken on the subject Mr. Deans proposed and Mr. Snaith seconded, that the letter lie on the table. Carried.

ELECTION OF OFFICERS.

The election of officers resulted as follows:—

President—Alfred Peele, F.R.C.V.S., West Hartlepool. *Vice-Presidents*—Geo. C. Hill, M.R.C.V.S., Darlington; Alex. Neish, M.R.C.V.S., Northallerton. *Treasurer*—H. H. Roberts, M.R.C.V.S., Bishop Auckland. *Secretary*—W. Awde, F.R.C.V.S., Stockton-on-Tees. *Auditors*—W. T. Briggs, M.R.C.V.S., Darlington; W. N. Dobbing, M.R.C.V.S., Darlington.

Messrs. F. R. Stevens and W. Awde were elected to make arrangements necessary for the Annual Dinner.

The PRESIDENT then informed the members that he had been very much disappointed on account of Professor McCall's inability to attend the meeting to read his promised paper, but he was glad to say that Mr. Thompson had kindly consented to fill his place and he heartily welcomed him on that his first visit to the Association.

Mr. THOMPSON then introduced the subject of parturition, and illustrated it by twenty-one diagrams, an account of which appears in *The Veterinary Record* of July 21st, 1894.

At the conclusion Mr. Deans proposed and Mr. Snarry seconded a hearty vote of thanks to Mr. Thompson for his kindness in having given them so valuable and practical a paper. Carried.

W. AWDE, *Hon. Sec.*

THE CENTRAL VETERINARY MEDICAL SOCIETY.

The last monthly meeting of the session was held at the Royal College of Veterinary Surgeons, 10 Red Lion Square, Holborn, on Thursday evening the 5th July, Mr. A. Prudames, the President, occupied the chair, and the other Fellows present were:—Prof. J. Wortley Axe, Professor F. Hobday, Professor J. Macqueen, Messrs. A. L. Butters, J. Sutcliffe Hurndall, W. Hunting, F. W. Kendal, P. McOnie, F. C. Mahon, (Hon. Sec.); H. G. Rogers, J. Rowe, (Hon. Treas.); F. Samson, W. Stapley, F. Orford Walpole, W. Willis, W. H. Williamson, T. J. Wooff.

On the motion of Mr. F. O. L. WALPOLE, seconded by Mr. J. ROWE, the minutes of the preceding meeting were taken as read and were confirmed.

The HON. SEC., (Mr. F. C. Mahon) intimated that he had received letters of regret at their inability to attend from Mr. Singleton, Professor Walley and Mr. J. Roalfe Cox.

Mr. D. Gregory, of 217 Amherst Road, Hackney, wrote resigning his Fellowship at the end of the current year.

Mr. MAHON moved and Mr. WALPOLE seconded that the resignation be accepted with an expression of regret. Carried unanimously.

NEW FELLOWS.

A ballot ended in the unanimous election of the following gentlemen as Fellows of the Society:—Mr. P. Vincent, M.R.C.V.S., Grays, Essex; Mr. Ulysses Carr, M.R.C.V.S., Royal Veterinary College, N.W.; and Mr. A. V. Field, M.R.C.V.S., 80 Old Street, E.C.

LEAD POISONING.

By Professor J. Wortley Axe.

Poisoning in the lower animals is a subject which from time to time forces itself on the attention of members of our profession, and also on occasions gives rise to a good deal of public interest, not to say excitement.

Especially is this the case when a Derby favourite or some sensational race horse happens to be the victim of actual or supposed foul play. It is not an unknown weakness of the human family to suspect the human family of inhuman acts, and in the sum of life's affairs I know no matter in which this weakness is so recklessly indulged as in regard to the poisoning of animals.

Sudden death in our domesticated creatures appears to many to be a mode of decease for which they are altogether unqualified. To be told that a man has suddenly died of apoplexy or heart failure is ordinarily sufficient to satisfy the most interested and bereaved of relatives, but there are some people, and among them not a few veterinary surgeons, to whose mind the sudden death of an animal brings with unerring certainty the idea of poison, and straightway the chemist is instructed to carry out a searching analysis, with the result that not one case of alleged poisoning in one hundred is affirmed by him. Heart failure and brain failure and other pathological eccentricities are events which the lay mind does not recognise as perils which beset the quadruped, and the professional mind often finds relief from exhaustive and critical inquiry in a declaration which shifts all further responsibility on to the shoulders of the chemist. The client, of course, having received assurance of the existence of poison looks to the chemist for confimation of the opinion of the pathologist, and this I am entitled to say he very seldom gets; not so much because the chemist is faulty in his methods, as because the practitioner is feeble in inquiry and precipitate in judgment. Now this want of thoroughness in the pursuit of related facts has frequently resulted in most serious losses to stock owners, and especially in those instances, which are far too many, where anthrax has been mistaken for poisoning. For in those cases measures necessary to prevention of the one are altogether disregarded in the delusive hope of finding some kind of satisfaciton in pursuing the other, the result being that the disease spreads, and its seeds are sown broadcast over the soil to continue or resume their deadly work at some future time.

Nor is this all, for in many instances these unfounded declarations of poisoning cause suspicion to be cast upon innocent persons, and it is impossible to measure the social and moral degradation to which they may sometimes lead. I am prompted to make these remarks in the hope that they may be the means of drawing attention to a matter which not only reflects upon ourselves, but is often attended with serious injury to others.

As to lead poisoning, I have not selected the subject on account of its novelty, nor because it is unusually prevalent, nor because I have anything to say about it which others may not have said before me, but mainly because I understood from your enthusiastic secretary that you were anxious to have something to talk about and to think about from one who was languishing for want of something to write about.

It is hardly necessary to say that poisoning by lead, although by no means of rare occurrence now, is much less common than it was thirty years ago. At that time the volunteer force was in its infancy and rifle practice was carried on to a large extent in pastures adjoining provincial towns, and the herbage in consequence became contaminated with bullet spray. Large quantities of the metal found its way into the stomachs of cattle, and sooner or later produced its toxic effects.

Numbers of the veterinary profession in various parts of the country drew attention to this new danger, with the result that our rifle ranges were removed to more suitable situations, or guarded against the encroachment of stock within the splashing range of bullets. Legislative measures dealing with the pollution of rivers and the escape of noxious fumes from smelting works have no doubt had the effect of diminishing to some extent the amount of lead poisoning which formerly prevailed in certain districts. Moreover, the danger which belongs to lead in its various combinations has become more widely known to stock masters and others, and precautionary measures against its ingestion by cattle are more strictly observed.

Notwithstanding this, plumbism does, and will continue to appear from time to time, and it cannot be otherwise than advantageous to review the clinical and pathological facts which pertain to it.

The sources whence animals may obtain lead in poisonous amount are many and various, and should always be present to the mind of the veterinary practitioner in dealing with cases clinically suspicious. A thorough acquaintance with the facts of lead distribution may afford valuable help in periods of doubt as to the etiology of certain neurotic affections in our farm animals.

In lead smelting districts outbreaks of lead poisoning in farm stock are not uncommon. Here roads and garden paths are frequently repaired with broken "slag," which, in the form of road scrapings, is sometimes used as a spring dressing for pasture land, the result being that the metal, in fine division, is ingested by cattle with the herbage, eventuating in plumbism. In Derbyshire, where large quantities of grains are pitted in the autumn for winter use, it is the practice of some to cover them down with earth, and we have known considerable sickness and mortality to result where road-scrapings containing slags have been used for this purpose.

Pastures in the vicinity of lead works suffer serious contamination with salts of the metal driven off from furnaces in the operation of smelting, and white lead factories also afford examples of the pernicious effects of this salt on animal life acting through food and water. The last case to which our attention was directed had its origin in the pollution of water by lead carbonate, which, as dust, had been carried into an open tank.

In the lead-mining districts of Cornwall and Wales many cases of disease and death have resulted from the overflow of rivers into which refuse has been cast from the washing of lead ore.

Paint may be said to rank as one of the most fruitful causes of lead poisoning, especially in bovine animals. This substance, which chiefly consists of the carbonate and oxide of lead, becomes accessible to farm stock in various ways. It is conveyed on to our pastures in manure from the building and painting establishments of our large towns. As spring comes round the cottager and country carpenter clean out their paint pots, and not unfrequently cast the refuge over a neighbouring fence, later on to be gathered up as a dainty morsel by some unfortunate cattle. At this period of the year, too, country houses are being done up, and gates, posts, fences, and farm implements receive their periodical coat of paint; hence it is that spring invariably brings with it reports of lead poisoning in agricultural districts remote from mines and works. To cattle paint is a delicacy which they cannot resist, and neither harmony of colouring nor artistic merit commands respect from them when they have determined its removable presence.

Water contamination now and again affords most pitiable examples of chronic plumbism. This is more

especially the case where the joints of tanks have been "stopped" with putty made up of lead carbonate, or where, in the repair or adjustment of pipes, this compound has been allowed to enter them, or to be unduly exposed to the water they carry.

The action of water directly on the metal rarely in itself gives rise to pollution dangerous to farm animals, but it is, nevertheless, a possible source of danger which the etiologist and the sanitarian cannot consistently disregard.

It must always be of interest to those who are engaged in unravelling the mysteries of disease, to study the influences which lead up to and determine the final conditions of causation. The causes which impart to water its solvent action on lead have been variously stated, and up to the present time the chemist has appeared to hold the field in the solution of the problem. Recent research, however, tends to indicate that the final words in this important question must await utterance by the biologist and the physicist. In the former connection Dr. Robert Smith has established the fact that the life processes of certain micro-organisms infecting moorland waters result in the development of an acid, and from facts obtained in course of inquiry into an outbreak of lead poisoning at Sheffield there is reason to believe that the plumbo-solvent action of a particular section of the Sheffield water was due to this cause. If this be so another item of sanitary importance will have been added to the nature of the gathering grounds whence water supplies are derived. From a sanitary point of view it is desirable to notice the conditions which influence the solution of lead by water. In this regard it is to be observed that although all descriptions of this metal are liable to be chemically acted upon, new lead, whether in the form of pipes or tanks, more readily undergoes solution than does that which has been in use for some time. The plumbo-solvent action of water, however, depends not so much on the state of newness or oldness of the metal, as upon the chemical properties of the water with which it is brought into contact, and the physical conditions, especially, perhaps, as to temperature and pressure under which it acts. Chemists are generally agreed:

1. That the natural waters which act most forcibly on this metal are among the purest of their kind; and besides possessing the quality of softness in a high degree, are at the same time largely charged with oxygen.

2. That those waters which contain an abundance of earthy salts, and which are known as hard waters, are least capable of plumbo-solvent action. While recognising these truths, it must at the same time be understood that all soft waters do not act upon lead, and that some do so only in an inferior and a harmless degree. Moreover, it has been noticed that the time during which this action continues differs in different samples. In some the solvent power soon becomes exhausted, but in others it is continued for long periods, and may in the course of its continuance acquire increased solvent action.

Exceptions are also to be found in regard of the rule pertaining to hard waters. In this class, generally so indifferent to lead, some examples are known to act upon it with considerable energy. But of the many features concerning the plumbo-solvent action of water none are so interesting and remarkable as that which relates to its diminution or disappearance in transit from one place to another. In this connection Mr. Power observes: "The water supply of Glasgow, where samples are taken in Loch Katrine, is found to possess very vigorous and sustained action on lead, whereas this same water as delivered from the town mains has been found to have very insignificant action on lead pipes, and, as a matter of fact, lead poisoning by the water service is not heard of in Glasgow." . . . . "Glasgow is some twenty-five miles from Loch Katrine, and the time occupied by the water in passing thence to the city mains is ten to twelve hours. The opportunity thus afforded for modification of the Loch Katrine water is considerable, so that the question arises, whether the obscured diminution or abolition of its plumbo solvent property is due (as is believed) to chemical action on it of the sandstone or limestone conduit conveying it, or to other and obscure influences."

"In the case of Glasgow water we must admit something beyond the material used in the construction of an artificial conduit may be concerned in the observed loss of plumbo-solvent ability, inasmuch as a similar loss of solvent action on lead of Loch Katrine water is discernible after it has flowed a few miles from the lake by its natural outlet; and in the case of other originally plumbo-solvent waters we meet with the fact that not a few rivers mainly arising from lakes whose soft waters act freely on lead, and traversing very various geological strata, furnish public water-supplies having little or no plumbo-solvent property, whether tested by laboratory experiment or by immunity of lead poisoning of consumers of the waters. Can it be, asks Mr. Power, "that mere delay of a soft water—by mechanical means, for instance, affording time and opportunity for filtration of the water, for exposure of it to light and air on weirs or in shallow channels and the like—in its passage from its collecting ground to its distribution in a town, goes far to rob it of any plumbo-solvent property it may originally have possessed?" These are problems which may at present appear to have but a scientific interest for the veterinary sanitarian, but we are not in a position to say that their solution is altogether void of practical importance; for out of the unconsidered trifles of to-day may be evolved the greatest scientific achievements of to-morrow.

To the veterinary practitioner and the stock-owner it is especially important to bear in mind that the action of water on lead and its compounds is greatly intensified by the presence of decomposing vegetable matter, and since the sources whence farm animal derive their supply are mostly in a state of organic contamination through the presence of leaves, parts of trees, and decaying aquatic plants, the possibility of danger from this cause requires to be considered in all cases where clinical indications of plumbism are present. Let me give you an illustration, not only of this fact but of the etiological subtlety which now and again surrounds the disease. Some time ago we were called upon to inquire into an outbreak of disease in a valuable stud of thorough-bred stock. The malady had been in existence between three and four years, and resulted in such havoc among the yearlings, as to render the continuance of breeding impossible under the circumstances then existing. Several veterinary experts had been consulted from time to time, and many and various opinions had been expressed as to the nature and origin of the disease. Among other causes it had been referred to ill-constructed stables, by some to deficiency of lime in the soil, by others to rheumatism, and one authority suggested as an alternative to the latter opinion that it might have lead for its origin.

Inquiry into points of possible relation to the opinions expressed did not appear to give support to any, save to that which attributed the disease to plumbism, but even here no sort of confirmation had been afforded from etiological data. The history and clinical characters of the affection could not be reconciled with anything else than lead poisoning, and acting upon this view of the question, inquiry was directed to a consideration of all that pertained to food and water antecedent to and during the period since the disease first appeared. The investigation had not proceeded far when it was found that food could be safely excluded from any concern in

the matter, and attention was thereupon directed exclusively to the consideration of water and possible sources of contamination. The history of the water itself was a very simple affair, but how it became contaminated and how it escaped detection were questions for which up to this time answers had not been forthcoming.

During and antecedent to the outbreak of the disease the water supplied to the stud was rain water, which had been collected from the roofs of stables and conducted by iron spouting into a large wooden tank. The place being in the country and far away from any possible source of atmospheric pollution, such as might exist in proximity with smelting works, it was taken for granted that the rain when it reached the buildings, was in a pure condition, and that any contamination pernicious or otherwise which it might have undergone have occurred either on the buildings, or in the tank, or in the conduits which conveyed it from the one to the other. Inasmuch as the latter consisted of iron piping, in which no sort of lead had been employed in fitting or repairs, the idea of finding any explanation of the outbreak here was soon abandoned. An examination of the roofs revealed the existence of three or four short lengths of lead guttering, and this for a moment claimed consideration, only, however, to be set aside as inadequate to occasion alone the serious pollution which must have existed to give rise to such fatal results.

The tank had been emptied and thoroughly cleansed, and this appeared to have been sufficient to disarm suspicion as to its possible concern in the outbreak, and we were assured again and again that the tank was free from harm and could have no possible connection with the disease. We were told that it had at no time been repaired, and being constructed of wood it could not therefore convey lead to the water; but, we urged, if our diagnosis is a correct one and our conclusions as to the insufficiency of pollution from any other source are warranted by the facts, then the offending matter must be found in the tank. The tank was therefore entered and submitted to a most careful examination in every part, with the result that a large quantity of putty-like matter was found in the joinings of the vessel, and this on analysis was subsequently found to be mainly composed of white lead. The sedimentary matter which had some time previously been removed from the tank was now sought after in an adjoining copse and recovered. This was found to consist of a large accumulation of decomposing leaves which had been washed from the roofs of the stables, together with a quantity of black vegetable sludge. Here, again, analysis brought to light lead in such amount that beads of the metal of considerable size could be readily obtained from it.

Thus ended the mystery which for nearly four years had hung over and impoverished this unfortunate stud. It is not to be understood that the water in this case would have proved harmless in the absence of decomposing vegetable matter, but there can, I think, be no doubt that by its presence the solvent quality of the water was greatly intensified.

I am glad to have an opportunity of putting this case on record, because it shows how much our success in etiological research depends upon a close observance of detail, and how desirable it is that patience and perseverance should attend upon well-grounded convictions.

The clinical phenomena which characterise the acute form of the disease present a great contrast to those exhibited in the course of a chronic attack. It is comparatively seldom that acute lead poisoning is seen in the horse, while in the ox it is a common form of the disease. This difference has no doubt relation to the physiology of digestion.

Primary mastication in ruminants is so far incomplete as to allow of the unconscious digestion of metallic lead and other foreign matters, against which the horse is guarded, by the more thorough and complete comminution which the food undergoes. Then as to the salts of lead, cattle are notoriously fond of them, and in the form of paint have frequently been known to consume large quantities. In one case in our own experience a heifer ate nearly three pounds of white lead and died in thirty-six hours.

The symptoms of plumbism present wide differences, both in severity and in kind, in different cases: this depending partly on the temperament of the animal, and partly also on the form and quantity of lead received. Young animals suffer more severely than older ones. Our experiences in this connection go to show that foals and even yearlings will die from the effects of lead in such quantities as produce no perceptible impairment of health in their dams. With regard to the course and duration of the disease, wide differences are noticed in different cases. In one the malady is sudden in its onset, severe in its action, and speedily fatal. In the other it commences as an obscure, ill-defined ailment, marked by a progressive anæmia extending over many weeks or months. In this chronic form of the malady it is impossible to put a limit to its duration. Experience shows that it may continue for any period between a few weeks and twelve months, and we see no reason why even the last-named period should not under certain circumstances be exceeded. Acute lead poisoning usually follows upon the ingestion of large quantities of some salt of lead, most commonly the carbonate or red oxide in the form of paint. The chronic form of the disease most frequently results when smaller quantities of such salts are periodically consumed with food or water, or when, as in the case of cattle especially, lead in the metallic state gains access to the stomach and undergoes slow oxidation and absorption. In saying this much it is not to be understood that metallic lead is incapable of inducing acute plumbism. As to whether it will or will not do so depends upon the amount and condition of the metal ingested. Where it is received in that form termed sheet lead a much larger surface of the metal is exposed to the action of the digestive secretions, and the quantity dissolved will be greater for a given time than where it exists in solid masses.

The clinical phenomena in acute lead poisoning are mainly those of great nervous depression, or excitation, or both consecutively, accompanied wth disordered locomotion. It is, indeed, essentially a neurotic affection involving the brain and spinal cord as well as the sympathetic system. The first obvious signs of the disease are dulness and listlessness with an indisposition to move or be moved. The affected animal stands in a fixed position with head depressed, pendent ears, and drooping eyelids. The face is void of expression, and the cheeks and lips are flaccid, and in some cases imperfectly under control. The pulse is but little or not at all disturbed, and in some instances slower than normal; the respirations are somewhat increased but shallow. Food is altogether refused, the bowels are torpid, the hair stares, and the secretion of milk in the cow is impaired or altogether arrested; the conjunctival membrane, although pale in the early period of the attack, soon becomes injected, as do also the vessels of the sclerotic. A discharge of tears frequently flows from the eyes, and saliva from the mouth. The teeth are forcibly ground, and convulsive fits, slight or severe, recur at shorter or longer intervals, and the gums have been said by some to present a blue discoloration.

In a large number of cases of both acute and chronic lead poisoning in the horse and ox I have not yet met with a single instance in which this phenomenon, common in the human subject, has appeared. In the further progress of the case dulness deepens into stupor and later into coma. The horns, ears, and legs are now cold, the breathing is laboured and accompanied with a

moan; twitching of the superficial muscles is noticed here and there; the movements become more and more unsteady, and end in complete paralysis. The animal now lays on the side, with head and legs extended, and after one or several convulsive seizures succumbs to the effects of the poison. In other cases the course of the disease is somewhat different. Here, after a brief period of dulness and stupor, succeeds one of restlessness and excitation, which may proceed to delirium and frenzy. The animal paces the yard or box, walking slowly round and round, usually in one direction. The pupil is dilated and impairment of vision is shown by the head being struck against the wall or some other fixed object in the animal's wanderings and delirium. Where resistance is met with the patient will fix his head against the obstruction and steadily or forcibly press forward, and continue to do so until he becomes exhausted, and falls or lapses into a state of coma. In this condition he remains for a longer or shorter period, and on being roused resumes the rotatory movements as before. In other cases, or at different stages of the same case, while the head is being forced against the wall symptoms of delirium appear, and the force used may be such, as in the ox, to break away the horns. The resistance appears to add to the excitement, and the animal bellows and furiously paws the ground. At this time the mouth is open, the tongue protrudes, saliva hangs from the lips, and the beast wears a wild and frenzid look. If in the open it gallops wildly about until stopped by some impediment, when it falls from exhaustion. In other cases, again, the patient knuckles over at the knees and fetlocks, and in some instances will occupy the kneeling posture for a considerable time while in a semi-comatose condition. The duration of an attack of acute lead poisoning varies from thirsy-six hours to four days; less severe attacks may extend over six to eight days.

(To be continued)

EXTRACTS AND NOTES.

A VETERINARY SURGEON AND HIS ASSISTANT.

At the Derby County Court, on Tuesday, July 10th, before His Honor Judge Kenelm Digby, and a jury, a case came on in which the plaintiff was Mr. Launcelot Harold Fairer, veterinary surgeon, and the defendant, Mr. Wm. Aulton, veterinary surgeon, of Derwent Street. Mr. M. C. Buszard, Q.C., was for the plaintiff; and Mr. Dominic Daly was for defendant. The claim was for £50 18s. 9d., and there was a counter claim of £97 16s. 3d. Mr. Buszard said the plaintiff in the action was a veterinary surgeon, fully qualified, who was a member of the Royal College of Veterinary Surgeons of London, and also a Fellow of the Veterinary Association of Edinboro'. The action was brought against Mr. Wm. Aulton, a veterinary surgeon, practising at Derby, to recover the sum of £50 18s. 9d., arising partly from arrears of salary, as assistant to the defendant, and including £4 4s. for four weeks' salary, in lieu of notice, besides £9 for money lent. The circumstances of the claim were as follows. Mr. Aulton was desirous of obtaining an assistant, and through the agency of a veterinary surgeon in the North of England, was put into communication with the plaintiff. The result was that Mr. Fairer came as Mr. Aulton's assistant at the end of 1890, at a salary of one guinea per week, with board and lodgings. On the 10th of March, Mr. Aulton, for reasons which perhaps he would explain, dismissed plaintiff from his service. At that time the defendant had paid the sum of £112 14s. 3d. in three years and a quarter, and there was left due and owing as arrears the sum claimed in the present action. Then, as he had already intimated, Mr. Aulton dismissed the plaintiff without the slightest cause or notice, and he thought, therefore, that the claim Mr. Fairer made for four weeks' salary in lieu of notice, was a very fair one. The counter-claim contained an item with respect to the keep of a grey mare, but it appeared that the plaintiff's parents bought him this mare, and Mr. Aulton undertook to keep it for nothing, on consideration of it being used in his business. The mare was not only used by the plaintiff, but by the defendant and his sons. Then Mr. Aulton took a fancy to the animal, and it was exchanged to him for a bay hunting horse belonging to the defendant.

The plaintiff was then called, and examined. Besides giving evidence in support of counsel's opening statement, he stated that he was not paid monthly as had been agreed, and he kept a book in which he entered the amounts due to him, and the amounts that he had received. These accounts showed that the amount was owing to him as stated. He had made applications for the money, and as it was not paid he placed the matter in the hands of his solicitor. There was not a word of truth in the allegation that he had collected any accounts without the defendant's knowledge or consent. He collected two accounts upon the direction of the defendant, this being by way of part payment of salary due at the time to him (plaintiff). He had not heard of defendant, ever having to attend to night cases by himself in consequence of his (plaintiff's) stopping out late, and defendant had never complained that he had had to attend to night cases under such circumstances.—Cross-examined by Mr. Dominic Daly: Had not defendant occasion to complain of your conduct for some considerable time towards the latter part of your service? No, he never complained to me.—It was part of your duty to attend to night cases?—Yes. And was it not also a condition of your engagement that you were not to practise in Derby on your own account?—There was no agreement. There was one written, but I never signed it. But it was understood that you were not to practice within ten miles of Derby?—That was in the agreement. His Honor: Do you say there was a verbal agreement?—Plaintiff: No, there was no agreement.—Mr. Daly: I will put it in this way. Was it understood between you that you were not to practise within ten miles of Derby?—Plaintiff: I did not intend to stay in Derby. It was mentioned that I was not to practise in Derby.—His Honor: May I take it then that it was understood you were not to practice in Derby or ten miles around?—Plaintiff assented.—Cross-examined: Is it a fact that complaints were made to you that you were not attending to the night cases? No, sir.—Were not you repeatedly out in the small hours of the morning?—No, sir. Have you attended to any cases on your own account?—I did in a friendly way on one occasion, but I did not charge anything. Were you ever guilty of asking the defendant's customers to transfer their custom to you when you started business for yourself?—No, sir. Just before leaving his service did you think of establishing yourself at Derby?—I had no intention of starting in Derby at the time. You have changed your mind since though, and have started at Derby?—Yes. Did you leave your card upon the customers of the defendant?—No. You deny broadly that you have done anything in the way of trying to take Mr. Aulton's customers?—Yes. Were not you dismissed on it being found out that you were trying to get a practice, and did not Mr. Aulton's son tell you that your action was dishonourable?—He told me to leave, but he did not give me any reason. Was it not an agreement that you were to pay 15s. a week for the keep of your horse?—No, sir. Re examined by Mr. Buszard, Q.C.: Were the horses used in Mr. Aulton's business?—Yes. When

I have used them I have been on his business, and I have represented him one or two times at the hunt. Was any complaint ever made to you while you were in Mr. Aulton's employment that you tried to take his custom?—No, sir.

Mr. Bendle W. Moore, solicitor for the plaintiff, was called, and he gave evidence of the communications which passed between the defendant and himself relative to the case, on it being placed in his hands.

Mr. Daly then opened the case for the defence, and in support of the counter-claim. He said the first point which the jury had to consider was whether the agreement between the parties was that the plaintiff should be paid a guinea or a pound a week. He would put the defendant in the box, who, he thought, would satisfy the jury that a mistake had been made. It was true the wages were stated as a guinea in a letter which was sent, but this mistake was subsequently corrected. An explanation was made to Mr. Fairer and he excepted the terms proposed, viz., a pound a week. This would bring the total amount of wages down from £179 11s. to £171. Another item of the plaintiff's claim was for £4 4s. as a month's wages in lieu of notice. It would, however, be for the jury to consider whether the plaintiff was dismissed under circumstances which justified no notice being given. The law allowed this under justifiable circumstances. One of the plaintiff's duties was to attend to the night cases, this being one of the reasons why he was engaged, as he was a young man, but he failed to perform his duty in this respect, and these cases had to be attended to by the defendant or his son. The plaintiff stayed out, generally speaking, till the small hours of the morning, at great inconvenience to the defendant, who had to reprimand him for doing so. Then it was discovered that the plaintiff was negotiating with a view to starting some sort of business for himself in the locality in defiance of the understanding between him and the defendant. The jury heard the plaintiff say while in the box that the understanding was that he was not to set up business in Derby.

His Honour: During his engagement.

Mr. Daly said these negotiations were going on during the plaintiff's engagement, and about March 7th this came to the knowledge of the defendant's son, who discharged the plaintiff. The defendant was quite content to take the responsibility of that dismissal and say that it was authorized. The plaintiff had brought a claim for some £50, but the defendant's counter-claim against him amounted to £97, which was mainly composed of items for the keep of horses belonging to the plaintiff. That counter claim would never have been advanced by Mr. Aulton, he would have been content to lose the money had it not been for the action of the plaintiff in this case. At various times the plaintiff had three horses in the defendant's stable, but the plaintiff had told the jury that the arrangement was that the defendant was to keep the animals, which were to be used for the defendant's work. But Mr. Aulton would give evidence that these horses were used for the benefit of the plaintiff himself, that the defendant was not depending upon them in his work, and that he was in no way interested in them. Mr. Aulton had therefore charged simply the cost price of these horses, fifteen shillings a week being a moderate sum.

Mr. Wm. Aulton was then called and gave evidence. He said that Fairer went on well until he became mixed up with Mr. Moore, his solicitor, a tobacconist in the town, and a man named Evans, who had concocted the whole affair. (Laughter.) The time the plaintiff began to "kick over the traces" was when he (witness) refused to allow him to go to Melbourne. (Renewed laughter.) On one occasion, when Fairer had been out late at night he did not get up until eleven the next morning. Witness was very busy, and Fairer said, "Is there anything to do?" Witness replied, "Yes, if you will do it," whereupon Fairer replied, "My game's hunting to-day." Witness had often asked plaintiff whether he wanted any money, and he occasionally gave him half-a-sovereign, but the unfortunate part was that they did not balance up once a month. The plaintiff fully understood about the payment for the keep of the horses. Witness neither rode nor drove the plaintiff's horses during the whole time they were at his place. He never knew that Fairer was to have a guinea a week until these proceedings were brought. He (witness) arranged to give him £1 per week.

Mr. Stanley Aulton, son of the defendant, was next called. He said that when the plaintiff was engaged as assistant to his father, witness wrote to him stating what his father was prepared to give him per week, but, by mistake he put in the letter that he would give him a guinea instead of a sovereign. He explained the mistake to Fairer afterwards, and the plaintiff replied "Oh, I am not to a shilling."

Mr. R. B. Aulton, veterinary surgeon, of Burton-on-Trent, also deposed to hearing the agreement about the keep of horses.

Mrs. Aulton, wife of the defendant, said that Fairer never informed her that he had collected £6 from Mr. Smith or £11 from Mr. Borrey. She kept her husband's books, and if Mr. Aulton had authorised Fairer to collect the accounts he would be obliged, in the ordinary way of business, to report the matter to her.

At this point Mr. Buszard put in the ledger, and contended that the word "paid" had been erased from the account bearing the name of Mr. Borrey.

Mr. J. W. Aulton and Mr. G. W. Reynolds, clerk to Mr. Stanley Aulton, also gave evidence.

This concluded the case for the defence, and Mr. Buszard proceeded to address the jury.

His Honour in summing up to the jury, said that the burden of proof in the case lay upon the defendant. The Judge then proceeded to analyse the evidence, and direct the attention of the jury to the salient points. Speaking of the conduct of the plaintiff in negotiating for a business before he left the defendant's service, he said that he did not see how anything done by Mr. Fairer could possibly violate the agreement, which was acknowledged. His Honour also pointed out that it seems a remarkable thing that although the plaintiff was only receiving £1 or a guinea per week as the case might be, he should agree to pay 15s. per week for the keep of a horse.

The jury, after an absence of half an hour, found for the plaintiff for the amount of £16 14s. 9d., and for the defendant on the counter-claim for £13 19s. 9d.

(Owing to the pressure on our space the above report has been held over.)

PROSECUTIONS BY THE R.C.V.S.

On 23rd July, 1894, Frederick Browning, a farrier, of 49 Howard Street, South Hornsey, was summoned before Mr. Dickinson, for acting as a veterinary surgeon without the necessary qualifications.

Mr. G. Thatcher prosecuted for the Royal College of Veterinary Surgeons, and said that the proceedings were instituted under section 17 of the Veterinary Surgeons Act, which set forth that no person who was not a member of the College or who was not registered as a practitioner, or the holder of the veterinary certificate of the Highland Agricultural Society of Scotland should be allowed to represent himself as a veterinary surgeon. The defendant carried on business at 49 Howard Street, and displayed a board on his premises with the following inscription:—

F. BROWNING,

VETERINARY AND SHOEING FORGES.

Infirmary for all Domestic Animals.

Contracts taken for Shoeing and Medical Attendance.

He quoted a judgment of Justices Hawkins and Wills on the point, in which it was held that the use of the words "veterinary forge" by a farrier was a pretence that the farrier had some special veterinary knowledge.

Mr. C. V. Young, for the defence, said that in face of that judgment he could not raise any defence. It was nevertheless the fact that the defendant had had the sign exhibited in front of his premises for 20 years; and if his friend would visit the farriers' shops within a mile radius of the defendant's place he would find at least 20 other farriers who described themselves in similar terms. It was true that the defendant had an "infirmary," but that was attended to by a qualified surgeon, so that no member of the College was deprived of his fees.

Mr. Dickenson: But there must be some object in using the words.

Mr. Young: It is like a man who calls himself a sanitary plumber. It means nothing, but it goes down with the public. (Laughter.) This was a case for a nominal penalty only.

Mr. Dickinson: The defendant is liable to a fine of £20. He now knows he must not make use of this word. I shall impose a fine of 20s., with 23s. costs.

VETERINARY SURGEONS AND SHOEING SMITHS.

At Derby on Saturday, Joseph Smith, shoeing smith, Summer Hill, Victoria Street, was summoned at the instance of the Royal College of Veterinary Surgeons for unlawfully using a title stating that he was qualified to practise a branch of veterinary surgery. Mr. Holbrook prosecuted, and Mr. Stone defended. The complaint against defendant was that on his large sign board appeared the words "Veterinary Shoeing Forge," and Mr. Holbrook contended that under the Act the defendant had no right to use the word veterinary. Mr. Stone contended that the defendant had not infringed the Act. By using the word veterinary he did not pretend that he was qualified to treat the diseases of animals, nor did he do anything beyond the business of an ordinary shoeing smith. The magistrates ordered a fine of 10s. and costs.

"Farriery" in Berkshire.

At the quarterly meeting of the Berkshire County Council held at Reading on Saturday, the Technical Education Committees' report contained the following:

FARRIERY.—In this subject the Council have struck out—so far as is known—a line of their own. Instruction is given by mean of a travelling van, containing two forges and the necessary accessories, all being under the charge of a competent practical instructor. It is urged that shoeing smiths, owing largely to the way in which manufacturers nowdays send out the iron, have lost much of the manipulative skill which they possessed a quarter of a century ago. A careful study of the shoes which the smiths who have come under instruction made at the commencement of each class, goes a long way towards proving the correctness of this assertion, while the value of the instruction given is strikingly apparent when an examination is made of the shoes turned out at the end of each course. During each class Mr. Wheatley, F.R.C.V.S., who really organises the work, attends and gives a lecture on the "Structure of the Horse's Foot: its Preparation for Shoeing; Shoes and Shoeing." In February a competition of pupils from the different centres was held at Reading. The result was very encouraging. I took the opportunity, on being present at this competition, to enter into conversation with several of the smiths, and was pleased with the way in which one and all spoke of the value of the instruction, and their desire for its continuance on an extended scale.

Carbonic Acid from Leaves.

In his researches on the respiration of plants, M. Maquenne states that leaves produce more carbonic acid in the air after being left for a time *vacuo*, than when in their normal state. As a consequence, it would seem that the living cells are capable of secreting and accumulating an unstable principle which decomposes. giving off carbonic acid, as soon as it is in contact with free oxygen.

Personal.

APPOINTMENTS.

Mr. JAMES LAITHWOOD, F.R.C.V.S., of Congleton, was on 16th July appointed Chief Veterinary Inspector for the Cheshire County Council. There were 30 applicants. Mr. Laithwood received 14 votes, the candidate nearest him getting 11. Mr. Laithwood is a gentleman of wide experience, and is highly and deservedly respected by all who know him.

ARMY VETERINARY DEPARTMENT.

We learn from India that, unless the Army Corps scheme comes into force before October 1st, in which case the Principal Veterinary Surgeon would be permanently placed on the Army Headquarters Staff, he will, according to present arrangements, visit all the local army veterinary branches during his coming tour. Vet.-Lieut. Loughlin succeeds Vet.-Major Rayment as Superintendent of the Civil Veterinary Department, North-West Provinces and Oudh. Vet.-Lieut. Loughlin has just four years' service, so that the Civil Department may be considered a good opening. Col. T. Deane of the Remount Department, Saharunpore, has returned to India after a short leave of absence at home.—*Army and Navy Gazette.*

CORRESPONDENCE.

THE HUISH-BLAKE CASTRATOR.

SIR,

Being one of the men selected by the patentee of the above instrument to experiment with it, and finding my correspondence upon the matter is assuming very large proportions, will you permit me to state through the columns of your widely read Journal, that beyond substitution of the Huish-Blake Castrator for an ordinary ecraseur or cautery iron, my method of proceeding is the same in every respect as in the ordinary way when operating upon a thrown colt.

Since April I have used the patent instrument upon nearly a hundred colts, from yearlings upwards to three year olds, also a considerable number of calves and ram lambs, without one single case of hæmorrhage or any bad after effects whatever, much to the satisfaction of myself and clients.

Taking the absence of hæmorrhage as being an immediate advantage, I may now add, that I do not see how it is possible for an animal to bleed if the grip upon the cord is maintained a few seconds after the testicle is severed, for the slot disc and ledge arrangement have most perfect control over the artery, and if the handles of the instrument are opened gently, nothing untoward will happen.

I have especially noticed, that while animals are being operated upon, there has been an entire absence of all that jerking and twisting so apparent when using an ordinary ecraseur or torsion.

I have found it good practice to let both testes out before using the instrument, thus avoiding the risk of inducing hæmorrhage in the endeavour to get up the one testicle after the other has been removed from the scrotum.

Some advocate shutting up the animal for 12 hours after the operation, but I seldom do this, as I turn the animal out in a meadow with a yard attached when the weather is favourable, driving into the yard at night during any rough weather.—Yours faithfully,

R. W. Dawtrey, M.R.C.V.S.

Chichester, July 18.

THE DUKE OF CAMBRIDGE AND THE R.V.C.

Sir,

On the late occasion of H.R.H.'s visit to Camden Town H.R.H. fully expatiated on the advantages to be derived by the public becoming subscribers to the Institution from the *quid pro quo* standpoint, but I think it is not generally known that this system of co-operative medical advice very materially interferes with the earnings of the ordinary practitioner, especially in the Metropolis. The students' fees are nearly triple those of twenty years ago, the curriculum is now extended to four years, the examinations are getting stiffer every year, and yet in the face of all these difficulties our *Alma Mater* handicaps us heavily by offering to do work for one guinea for which her late students are reasonably entitled to charge five. Against the system of giving gratuitous advice to the poor owners of horses no exception can be taken, as on these lines all hospitals are maintained, but that a teaching school whose primary object is the higher and better education of veterinary surgeons should turn out some fifty students annually to practically starve is a very grave matter, and is not the attitude that should be adopted towards her graduates.

Noblesse oblige! If the Institution wants funds, by all means let the public *unselfishly* subscribe to such a noble work, or if necessary let the students' fees be still further raised, but for very shame's sake don't let her hold out to the aspiring student the "tender leaves of hope" to get a fair living (?)—which after "bearing his blushing honours thick upon him" lands him in a "killing frost" which withers the best of us.

The public think they get better—higher—advice at Camden Town than from the ordinary practitioner, but is this really so? do we not all study alike? They get it cheaper, but the careful general practitioner is quite as capable of diagnosing lameness or sickness in his patient as a professor with some twenty-five students around him.

With the greatest respect for H.R.H. the Duke, I think the College well situated (if London be its location at all) and that the "benefits offered by the Institution" should be supported in so far as they do not interfere with the welfare of the outside workers; I look upon the thousand and odd examinations of horses at the College last year as so many guineas loss to the struggling members who buy at a pretty high rate from her the prospect of their future livelihood.

Apologizing for trespassing on your space in what may seem to be a personal matter.—I am, &c.,

Henry Dyer.

AN IMPROVED APPARATUS FOR THE ADMINISTRATION OF CHLOROFORM TO HORSES.

Sir,

I hope Mr. Hoare will not think me discourteous if I avow myself compelled to decline his conditions of discussion. The "unwary correspondent who may happen to make a slip . . . in grammar" has my sincerest commiseration, but my sympathy ends there. To suggest that an absence of "logic" is also to be overlooked is in my humble opinion to render discussion superfluous.

Briefly stated my position is this: after seeing Mr. Krohne, looking at such of the apparatus as he had, discussing the matter with him and reading Mr. Hoare's description of the instrument, I am unable to discover any essential difference between it and that used by Mr. Clarke seven years ago. I therefore deny Mr. Hoare's right to play God-father to it. This is surely a sufficiently "clear point" for discussion. But it is the one point which Mr. Hoare evades, though he cheerfully devotes space to misrepresenting me.

Here is an example "I *never* asked Mr. Dollar for any explanation as to the freezing of the chloroform vapour during the working of the apparatus." Well, I can only reply that I *never* proferred any such explanation. In fact I stoutly denied and continue to deny that the "chloroform vapour" does freeze, but I did say and continue to say that the watery vapour always present in the air freezes and it is this which sometimes stops the apparatus. Perhaps it is something peculiar about my "logic" which prevents my seeing Mr. Hoare's point.

My correspondent continues "If Mr. Dollar's experience in the administration of chloroform be more extensive than mine he may be justified in finding fault with the present apparatus, and suggesting improvements even before he has tried it." Now after the somewhat severe editorial remarks of last week with reference to clinical—ahem—misstatement, I have a rather natural diffidence about defining my "experience" especially as it might be brought—quite unworthily—into contrast with Mr. Hoare's, but I think that I do not transgress far in saying that I have given chloroform to from 70 to 80 horses, and although this may seem a small number I should add that in 12 to 14, third stage anæsthesia has been kept up for periods of one to four hours. So after all I may perhaps claim a little acquaintance with the administration of chloroform. With regard to my "suggesting improvements" before I have tried the apparatus, it does not seem to have occurred to Mr. Hoare that the subject of this discussion is—whether there is any difference between the apparatus used by him and that employed by Mr. Clarke: that after seeing both I maintain there is not, and threfore that I have both seen and used the apparatus of which he is speaking.

My own dictionary defines "perfect" (when used as an adjective) to be "complete in all its parts, faultless" and when as a verb "to finish, to complete." I am still wondering how something which is "faultless" can be improved or which when "complete" can be made more so.

I cannot help thinking that the last paragraph goes a little beyond the intention of the writer, and that he does not in reality wish to question my truthfulness. "Has this apparatus of Mr. Clarke's been extensively used in practice? if so by whom, and at what instrument maker's can it be obtained? I have seen no description of it save Mr. Dollar's."

I beg to assure Mr. Hoare that I am not describing a mythical apparatus. A reference to Mr. Krohne's letter will show that I told that gentleman of the apparatus some years ago, and (he might have added) described it at length to him at a time when he had nothing of the kind to show me. Mr. Jones, M.R.C.V.S., of London Road, Leicester, has seen it in use, and I believe Mr. Piesse, M.R.C.V.S., late of Red Hill, also. Mr. R. H. Clarke, of Westwood, Thanet, would probably answer a polite note of enquiry addressed to him. Though I have mentioned these names I need not remind Mr. Hoare that it is a usual custom to accept as true a statement which is not manifestly otherwise.

Jno. A. W. Dollar.

SPAYING PIGS.

A correspondent writes:—"Can you or any of your readers supply me with a book that treats of spaying pigs, or can you recommend any that gives details of that operation?"

W. Astbury.

Communications, Books, and Papers received:—Messrs. H. Begg, H. J. Dawes, E. Morgan, J. A. W. Dollar, (3) H. Olver, T. C. Garry, R. Cockburn, A. J. Philip, J. K. Pilkington. *The Central Somerset Gazette.*

Original articles and reports should be written on one side only of the paper, and authenticated by the names and addresses of the writers, not necessarily for publication.